Thelma Foster

A Manual

of

Nursing Procedures

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PREFACE

THIS manual of nursing procedures is intended to be used with a standard text-book on nursing. Text-books combining both the theory and the procedures have, for the younger students especially, often led to confusion and consequent difficulty in systematizing the procedures.

The methods given here are those that have been followed for several years in the General, Homeopathic, and Highland Hospitals of Rochester, N. Y., and that are also being used in the Central School of Nursing, Utica, N. Y. Each procedure has been given considerable practical trial, and is the result of several revisions. While there are various efficient ways of accomplishing the same end, it was not considered wise to give many of these in one small manual. A multiplicity of methods easily leads to confusion, especially for the younger student.

The text has been made as concise as possible. The arrangement in outline form, giving purposes, required equipment, method of procedure, and precautions, is intended to give a clear, logical picture that will save confusion, time, and energy. A few well-tried rules for solutions and dosages have been added.

Too much stress cannot be placed upon good technic. The nurse who can systematize her work saves not only her own time and energy but also saves her patient nerve irritation and the resulting fatigue. There should be no confusion in

connection with nursing either in the ward or in the home. After all, it is the type of work that the nurse does that counts. All the education which a nurse receives—and she cannot receive too much—should contribute toward her efficiency as a nurse and her helpfulness in the home.

The excellent photographs from which the illustrations were made are the work of Mr. Charles G. Hooper, of Rochester, N. Y.

E. P. R.

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A Manual of Nursing Procedures

Fig. 1.—Practice period in the class demonstration room.

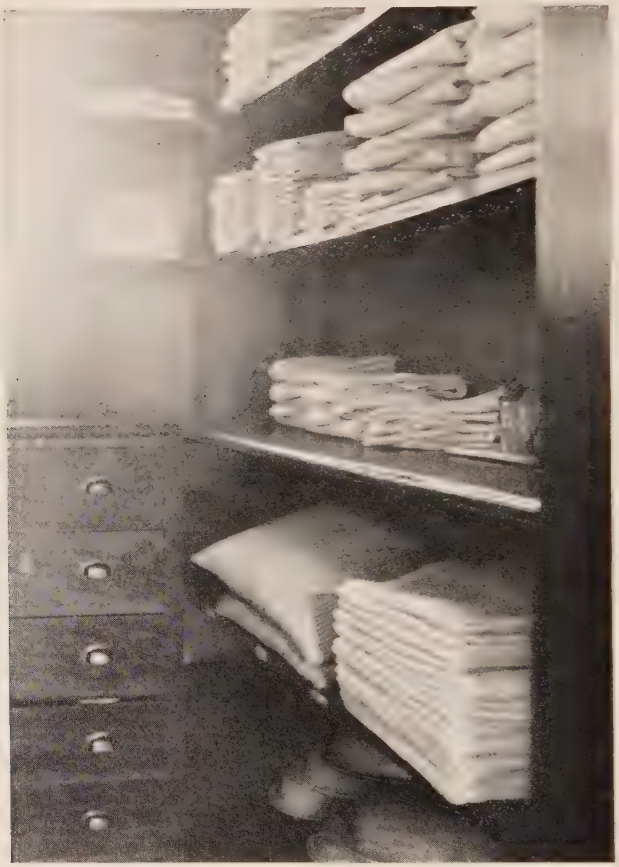

Fig. 2.—Linen and supply closet in class room.

Fig. 3.—Medicine closet in class room.

Fig. 5.—Mattress cover partly in place.

CLEANING A BED

Purpose:

To provide clean, attractive, hygienic surroundings for the patient.

Equipment:

Dust basin containing warm soapy water (0.5 per cent. lysol may be used).

Two cleaning cloths.

Small brush (tooth-brush is good).

Brush broom.

Cleaning soap.

Newspapers.

Clean sheet.

Procedure:

Strip the bed, placing the soiled linen in a pillow-case.

Brush the mattress and pillows with a brush moistened in lysol and soap solution. (If the mattress is not covered, be careful to brush well into all the seams.)

Remove mattress, blankets, and pillows to sun porch.

Change mattress cover* if necessary.

Clean the bed frame with soapy water, using cleaning soap only where necessary (do not scratch the enamel).

Use the small brush for corners.

Clean the table and chair.

Place papers on the bed springs.

Place rubber sheet on papers, and clean, washing every portion with lysol and soap solution.

Place rubber sheet over the head of the bed.

Make a fresh 0.5 per cent. lysol solution and brush the springs.

* This is a close-fitting cover of unbleached muslin, the open end of which is basted up, or tied with tapes, after being fitted to the mattress (Fig. 5).

Replace rubber sheet on the springs, cover with a clean sheet, and leave until ready to make up the bed.

Table drawers, bureau drawers, etc., should be thoroughly cleaned.

NOTE: If it is suspected that the bed is vermin infested, the following procedure may be adopted, and additional equipment will be required.

Additional Equipment:

Wood alcohol.

Lighter.

Damp cloth.

Old rubber sheet.

Procedure:

Remove all soiled clothes except one sheet.

After the mattress, pillows, and blankets have been removed, spread the soiled sheet under the bed.

Tap the springs, going over them thoroughly.

Remove the sheet, and if any vermin have fallen into it, fold carefully, and place in an antiseptic solution.

Place old rubber sheet under the foot and the head of the bed.

Put wood alcohol into all cracks, and light (one part at a time).

Have a damp cloth ready, in case burning alcohol falls to the floor.

Clean the bed as in the preceding demonstration.

NOTE: Keep at a little distance from the flame of the alcohol, and, if in the ward, screen the bed.

MAKING AN EMPTY BED

Purpose:

Comfort and neatness.

Equipment:

2 sheets.
1 draw-sheet.
1 rubber sheet.
2 pillow-cases.
2 blankets.
1 spread.
2 pillows.
1 towel.
1 face cloth.

Procedure:

Move the table away from the bed.

Move the chair away from the bed, placing squarely.

Stand at the foot of the bed, and turn the mattress.

Place mattress pad (if one is used).

Place the bottom sheet, having the middle of the sheet at the middle of the bed, and allowing plenty to tuck in at the top. (Have the foot of the mattress well covered.)

Make square corners at the foot and head of the bed.

Tuck in at the side.

Place rubber sheet at the middle of the mattress, and 12 to 14 inches from the top.

Tuck in at the side.

TO FOLD A DRAW-SHEET WHEN A LARGE SHEET IS USED

Fold hemmed ends down, one end being about $2\frac{1}{2}$ feet lower than the other. Hold the sheet with the wrong side toward you, and fold edges together right side in, then fold back same edges to center fold in form of W (Figs. 6 and 7).

Cover the rubber with the draw-sheet, and tuck in (Figs. 8 and 9).

Place the top sheet hem side up a little above the end of the mattress.

Make square corner at the foot of the bed.

Fig. 6.—Folding a draw-sheet: Step 1.

Fig. 7.—Folding a draw-sheet: Step 2.

Fig. 8.—Adjusting draw-sheet.

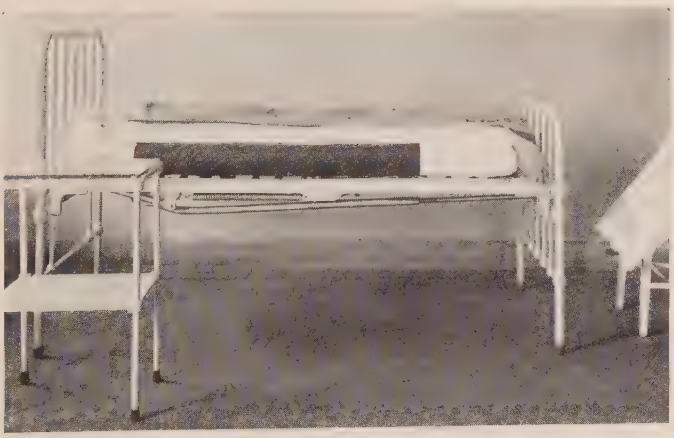

Fig. 9.—Second side of bed partly completed.

Fig. 10.—Making square corner on first blanket.

Fig. 11.—Making square corner on second blanket.

Place first blanket 2 inches from the top of the mattress and tuck in at the foot with a square corner (Fig. 10).

Place second blanket well down at the foot.

Tuck in at the side, and make a square corner at the foot of the bed (Fig. 11).

Fold the sheet over the top of the blankets, and tuck in.

Go to the other side of the bed.

Fold the clothes back along the side of the bed.

Beginning with the bottom sheet, pull the clothes very tight, and make as the other side.

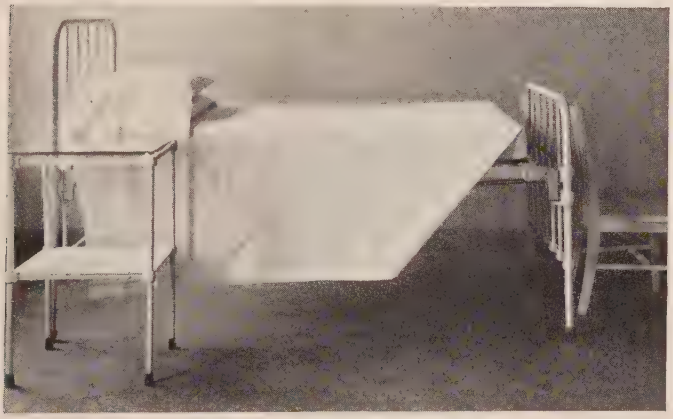

Fig. 12.—Completed bed.

Place the bed spread, being sure to have it straight.

Make envelope corners.

Put cases on the pillows, placing the lower one with the closed end toward the table, the second pillow the opposite way.

Place table squarely at the side of the bed.

Place chair with back to foot of bed (if in the ward).

If in the ward, see that the bed, table, and chair are in line with the others.

See that the bed is *tightly* made, and that everything is clean and in order (Fig. 12).

Fig. 10.—Making square corner on first blanket.

Fig. 11.—Making square corner on second blanket.

Place first blanket 2 inches from the top of the mattress and tuck in at the foot with a square corner (Fig. 10).

Place second blanket well down at the foot.

Tuck in at the side, and make a square corner at the foot of the bed (Fig. 11).

Fold the sheet over the top of the blankets, and tuck in.

Go to the other side of the bed.

Fold the clothes back along the side of the bed.

Beginning with the bottom sheet, pull the clothes very tight, and make as the other side.

Fig. 12.—Completed bed.

Place the bed spread, being sure to have it straight.

Make envelope corners.

Put cases on the pillows, placing the lower one with the closed end toward the table, the second pillow the opposite way.

Place table squarely at the side of the bed.

Place chair with back to foot of bed (if in the ward).

If in the ward, see that the bed, table, and chair are in line with the others.

See that the bed is *tightly* made, and that everything is clean and in order (Fig. 12).

TO OPEN BED

Place table at one side.

Remove the pillows.

Loosen bedding to draw-sheet on one side.

Fold top of spread under the blanket, and the sheet over spread.

Arrange other side of bed the same.

Turn bedding down to edge of mattress, and fold back to make a box-plait (Fig. 13).

Fig. 13.—An open bed.

See that draw-sheet is tight and smooth.

Replace the pillows.

Put stand in place.

TO STRIP A BED

Place table at one side.
Move chair away from the bed and place squarely.
Place the pillows on chair and remove soiled cases.
Keep case for soiled bedding on back of chair.
Loosen bedding down to mattress around entire bed.
Fold spread, blankets, and sheets, and place on the chair.
Put soiled bedding in pillow-case, or fold and place on chair.

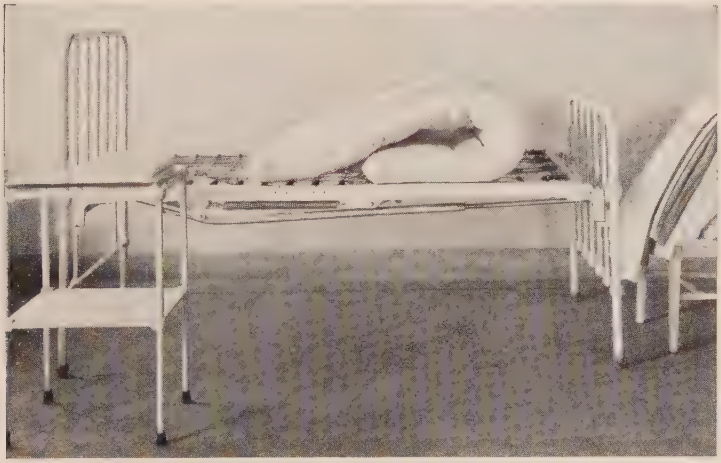

Fig. 14.—Mattress airing.

Turn mattress end to end, and leave to air (Fig. 14).
Replace table and chair, remove soiled bedding.

CONVALESCENT BED

When making a bed for a patient who is up all day, and there is no danger of drainage, etc., soiling the bed, the rubber sheet may be placed under the bottom sheet, and the draw-sheet omitted.

MORNING CARE OF A BED PATIENT INCLUDING MAKING THE BED

Purpose:

Comfort, cleanliness, neatness.

Equipment:

Wash-basin with warm water.
Towel.
Soap.
Face cloth.
Nail file or orange-wood stick.
Comb.
Bathing alcohol.
Powder.
Pillow-case.
Sheet.
Gown.

Procedure:

Remove the pillows.
Change case and put soiled case on back of the chair.
Loosen bedding to the mattress all around the bed.
Fold spread and top blanket and place on the chair.
Change the top sheet, by putting the clean sheet in place, and slipping the blanket and soiled top sheet out.
Replace blanket.
Fold top sheet if it is to be used as draw-sheet.
Change the gown.
Turn patient on her side.
Turn top bedding back, along the side, over the patient.
Wash the back, rub with bathing lotion, then powder.
Fold the soiled draw-sheet up against the patient.
Fold rubber sheet out of the way.
Brush all crumbs from the bottom sheet, and tuck in.

Place the rubber sheet and tuck under the mattress.

Be sure that no crumbs are left on rubber or sheet.

Place clean draw-sheet, tuck under the mattress, and fold against soiled draw-sheet.

Turn patient back and remove soiled sheet, at the same time drawing the clean sheet under the patient.

Go to other side of the bed.

Place soiled sheet in pillow-case.

Make up the bed, beginning with the lower sheet, making all tight, smooth, and free from crumbs.

Adjust upper bedding, replacing blanket and spread.

Replace the pillows.

Comb the patient's hair, protecting the clean bed by placing a towel under the hair.

Clean the finger-nails, also using a towel to protect the bed.

To Change the Lower Sheet:

When changing the lower sheet, arrange it in folds under the patient, as when changing the draw-sheet.

Place clean sheet with center at center of bed.

Proceed as when changing the draw-sheet.

NOTE: Be sure that the bedside table, the room, and everything in it is clean, and in perfect order.

Place the call bell within the patient's reach.

While working, be most careful to insure privacy for the patient. This is particularly necessary when the patient is in the ward.

EVENING CARE OF THE PATIENT

Purpose:

To refresh and rest the patient, and make him comfortable for the night.

Equipment:

Basin with warm water.
Soap.
Face cloth.
Towel.
Alcohol or bathing lotion.
Powder.

Procedure:

Remove the pillows.
Turn the patient on his side.
Wash the back, dry, rub with alcohol, and powder.
Loosen draw-sheet and rubber.
Brush all crumbs from the bed.
Tighten draw-sheet and rubber and tuck in.
Turn the patient back and make the other side of the bed.
Shake up the pillows and replace.
Adjust upper bedding.

Ascertain the patient's requirements or wishes as to hot-water bottle, extra bedding, drink of water, bed-pan, etc.

NOTE: In the wards the patients are given water for the face and hands previous to the evening toilet, usually before supper.

The patient must be given an opportunity to brush the teeth when most convenient or desirable.

As far as it is possible to do so, follow the patient's wishes as to time and order of giving the care outlined above. Make your patient feel that he is the one being considered, rather than the nurse. In other words, "do as you would have done for you," whenever it is possible to do so.

ETHER BED

Purpose:

Warmth for the patient.

Protection for the bed.

Convenience in caring for the patient.

Equipment:

Equipment as for a closed bed and, in addition,

2 small rubbers.

2 draw-sheets (or ether sheets).

2 bath blankets.

Hot-water bottles with covers.

Two pieces of bandage.

2 towels.

2 vomitus basins.

Pad and pencils.

Paper bag.

Safety-pin.

Small pieces of gauze or paper napkins.

2 small bowls for ice.

Shock blocks.

Rubber pillow-case.

Procedure:

Make up as a closed bed, including the draw-sheet.

Place one rubber under the region of the operation.

Cover with a draw-sheet (or ether sheet).

Protect the head of the mattress with a rubber and draw-sheet.

Place bath blanket on the bed, bringing the top 6 inches from the top of the mattress.

Fold sides of blanket until they almost meet in the center.

Fold back the top corners to form a triangle.

Place covered hot-water bags in the fold of this blanket.

Put on the top sheet and both blankets, without tucking in.

Place the spread.

Turn the spread under the blankets at the top, and the sheet over the spread.

Protect the top of the sheet and spread by folding a towel over them.

Make a cuff at the foot of the bed, as at the top.

Tuck in bedding on the side opposite the stand.

Fold back the bedding on the side next the stand in a neat fold, having the edge of the fold come to the edge of the mattress.

Have one pillow protected by a rubber case ready to place under the patient's knees (this may be left on the chair).

Protect the second pillow with a rubber case, and tie upright against the head of the bed (bandages may be used for this).

Place the stand by the bed, with towels, basins, gauze, pad and pencil, and bowls of ice, neatly arranged.

Fasten the paper bag to the side of the table or to the mattress.

When the Patient Returns:

Stand on opposite side of the bed, turn clothes back and remove heaters. Cover the patient with the bath blanket, adjust upper bedding, and tuck in at the foot. *If so ordered*, the heaters may be refilled and placed around the patient, *outside the bath blanket*. The extra blanket may be used to cover the patient's chest and shoulders. Great care must be taken that the patient is not chilled or exposed to a draft. Do not leave an ether patient alone one moment.

NOTE: In many hospitals surgical patients are kept in the recovery room until at least partly recovered from the effects of the ether. In this case they are awake when returning to their own bed, and part of the equipment listed in the preceding demonstration will not be required.

Equipment:

In addition to the regular bed equipment,

2 bath blankets.

Small rubber sheet and surgical pad or draw-sheet.
Hot-water bottles with covers.
2 rubber pillow-cases.
2 towels.
2 vomitus basins.

Procedure:

Make up as a closed bed, including the draw-sheet.

Place the small rubber, covered with a surgical pad (or ether sheet), under region of operation.

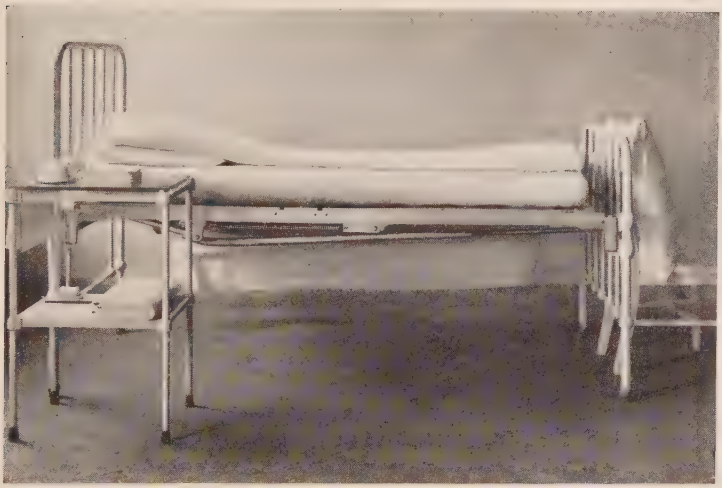

Fig. 15.—Bed ready for an ether patient.

Place bath blanket, upper hem 6 inches from top of mattress.

Place sheet, blankets, and spread, but do not tuck in.

Fold spread under blankets at the top, and sheet over spread.

Make similar cuff at foot of the bed, making fold even with the foot of the mattress.

Open the side nearest the door by turning back the upper bedding in two longitudinal folds, bringing to the edge of the mattress (Fig. 15).

Place pillow, covered with rubber and linen case, open end away from the stand.

Place hot-water bottles, covered, in the bed.

The extra blanket, basins, and towels are left on the table.

The second pillow, protected with a rubber case, is placed on the chair at the foot of the bed.

When the patient returns remove the hot-water bottles, cover the patient comfortably, and tuck in the bedding.

TONSIL BED

If the child is to be in the hospital just a few hours or a day, the bed may be made without a draw-sheet, placing the rubber sheet under the bottom sheet. Place a second rubber completely covering the mattress at the head of the bed, and cover this with a surgical pad or ether sheet. Otherwise make up as for an ordinary surgical bed.

BED BATH

Purpose:

Cleanliness and comfort of the patient.

Equipment:

Face towel.
Bath towel.
Clean sheet.
Pillow-case.
Gown.
2 bath blankets.
Face cloth.
Powder and comb.
Soap.
Scissors, orange-wood stick, and nail file.
Alcohol or other bathing lotion.
Tub with water about 110° F.
Small rubber to protect the table.

Procedure:

Remove the pillows.

Remove spread and upper blankets, fold and place on the back of the chair.

Place bath blanket, as when changing upper sheet (Fig. 16).

Cover the patient with one warm blanket if it is cold.

Turn the patient on his side, and place the second bath blanket under him.

Remove the gown.

Wash the face with clear water (Fig. 17).

Wash neck and ears with soapy water, being careful not to get soap in the ear canal.

Bathe arms, axillæ, and chest.

Bathe abdomen. Dry each part thoroughly.

Bathe the back, dry, and rub with alcohol and powder.

Fig. 16.—Adjusting bath blanket.

Fig. 17.—Beginning the bath.

Bathe each thigh and leg, uncovering only a portion at one time, and dry carefully.

Place the tub at the foot of the bed, and the feet in the tub.

Bathe well, especially between the toes.

Place feet on bath towel, remove tub, and dry the feet.

Unless the patient is very ill, he may himself bathe the perineal region, the nurse seeing that cloth, water, and towel are within easy reach.

Fig. 18.—Making bed after bath.

Finger- and toe-nails must be kept clean and properly cut (toe-nails may be cut straight across).

Put on the patient's gown, remove bath blankets, and make up the bed (Fig. 18).

Comb the patient's hair, protecting the bed with a towel.

Be sure that the patient is left warm and comfortable.

Avoid any unnecessary exposure, and use screens as required.

TO PLACE A PATIENT ON A BACK-REST

Purpose:

As a support when convalescents are up in bed.

For goiter cases, who must be in the semi-upright position constantly.

For asthma patients.

For cardiac patients.

Surgical and obstetric patients who must be kept in the Fowler position to facilitate drainage.

Equipment:

Back-rest.

Cover for the back-rest.

5 large pillows.

1 or 2 small pillows.

Bath blanket.

Safety-pins.

Rubber pillow-case.

2 sheets (for slings).

Procedure:

Cover the back-rest (for neatness and cleanliness).

Make a sling by placing the large pillow protected by the rubber case diagonally in the sheet and twisting the ends.

Make a second sling, using the small pillow.

Have equipment ready at the bedside.

One nurse may support the patient while an assistant adjusts the back-rest and pillows (Fig. 19).

Arrange first pillow lengthwise, then one under each arm, closed end out, and one under the patient's head.

A small pillow may be needed also under the head.

Place the bath blanket around the patient's shoulders and pin as a nightingale.

Fig. 19.—Ready to lift the patient before placing the back-rest.

Fig. 20.—Patient on back-rest, slings adjusted.

Place the large sling under the knees, and tie it to the side of the head-rest.

Place the small sling at the patient's feet. Tie to rail of the bed frame.

Shock blocks, elevating the foot of the bed, may be used to keep the patient from sliding down in bed.

Be sure that the patient is comfortable, and that he does not slip down in an uncomfortable position (Fig. 21).

Fig. 21.—Gatch bed in use.

NOTE: If the patient is a convalescent, and up for a short time only, the slings will not be necessary.

If a Gatch bed is used, fewer pillows will be required, as the bed is adjusted to the desired position (Fig. 21).

TO ASSIST A PATIENT OUT OF BED

Purpose:

To aid the patient in gaining strength.

Equipment:

Comfortable chair.

2 blankets.

Pillows.

Safety-pins.

Patient's underclothing, stockings, bath robe, and slippers.

Foot-rest.

Procedure:

Dress the patient while he is lying down. (If this is the first time the patient is getting up, strength must be conserved.)

Arrange the chair with blankets and pillows, and place near the bed.

With one arm under the patient's shoulders and one under his knees help him to the edge of the bed, and into the chair. (If the patient is heavy, two nurses will be needed.)

Arrange blankets comfortably around the patient, and, if cold, pin one around shoulders in form of a nightingale.

Place a small stool for the patient's feet, and see that the ankles and feet are well covered with the blankets.

Watch the patient carefully and do not leave him up until exhausted; *never* more than twenty minutes the first time.

Place the stand and call bell within easy reach.

Be sure that the patient is warm and comfortable.

PREPARATION OF BED FOR FRACTURE CASE

Purpose:

To give the usual nursing care to a patient, and at the same time avoid injury to a fracture, or pain and discomfort to the patient.

Equipment:

To *prepare a bed* for a patient with a fracture of the leg or thigh the following equipment will be required:

Fig. 22.—Arrangement of fractured limb.

Equipment for a Fracture Bed:

Cradle.
Extra pillow and pillow-case.
Rubber pillow-case.
Sand-bags.
Fracture boards.
Bath blanket (if cold).

Safety-pins.

Bandage.

Arrangement of Bed:

Place fracture board under the mattress to prevent any sagging under the fractured limb.

The patient is placed in the bed with the fractured limb resting on the rubber-protected pillow (Fig. 22).

The end of the case may be pinned around the foot, and a bandage tied around the pillow to keep the part in a fixed position.

Sand-bags are placed on either side of the pillow.

If cold, a bath blanket is placed loosely over the limb. Avoid weight on the toes.

Place a cradle over the foot and leg, to prevent the weight of the bedding causing discomfort.

The bed must be firm, and give perfect and even support to the broken limb.

TO GIVE MORNING CARE TO THE PATIENT IN THE BED DESCRIBED ABOVE

Equipment:

Same as that required for the care of the average patient.

Procedure:

Remove the pillows, spread, top blankets, and such fracture equipment as possible.

Put on top clean sheet, and replace one blanket.

Change the gown.

Wash the back, rub with bathing lotion, and powder. (The patient may sit up to have the back washed, or it may be done by first rubbing the shoulders, then the hips. *Do not* turn the patient on his side.)

Have the patient move to one side of the bed, first giving support both above and below the point of fracture, and allowing the patient to move his body.

Make one side of the bed.

Move the patient back in the same manner, and make the other side of the bed.

Replace the pillow and the fracture equipment.

See that the limb is straight, comfortable, and well supported, also that no weight is over the toes.

Adjust top bedding.

It may be found difficult to adjust the spread neatly over the cradle. It may be brought down over the foot of the bed, folded squarely, and pinned. Sometimes it is easier and gives a better

Fig. 23.—Completed fracture bed.

appearance to tuck in the spread and fold the corners as neatly as possible (Fig. 23).

IF THE PATIENT IS IN A BODY CAST

A patient in a cast requires expert nursing care.

Protect the cast in every possible way from being soiled.

Care must be taken to prevent cracking or breaking the cast. A broken cast is of no use, neither is a soiled one, as the soiling softens the plaster.

The effects of the cast upon circulation must be noted: pain, numbness, and blueness of the extremities are adverse symptoms.

Care must also be taken to prevent chafing of the skin and development of sores just under or at the edge of the plaster.

Pressure may be relieved by the proper placing of small pads, the use of which will help to relax muscular tension, and so relieve pressure.

Whether in a cast or not, all possible care should be taken to move the injured part as little as possible, and at the same time to ensure the comfort of the patient.

Bed-sores, both of the back and the heels, must be constantly guarded against.

Good nursing care will include rubbing of the upper part of the back to insure good circulation in the lungs, and instruction of the patient in breathing exercises, also to prevent congestion in the lungs.

Whenever possible, nursing care should be used to relieve discomfort and pain. P. R. N. orders for opiates used *only* when these fail.

TO MOVE A PATIENT FROM ONE BED TO ANOTHER

Purpose:

When a patient is confined to bed for some time it is very desirable to move him frequently to another bed, so that the mattress may be turned, aired, and made up fresh.

FIRST METHOD

Equipment:

An extra bed and mattress, or a surgical cart.

Sheet.

Rubber draw-sheet.

Procedure:

Have the extra bed made up as far as the rubber sheet.

Remove pillows from under the patient's head.

Loosen bedding as far as the rubber sheet, all around the bed, and fold over the patient.

Place the beds together, having an assistant hold them to prevent slipping apart.

Reach across the empty bed, and, grasping the draw-sheet, move the patient to the new bed.

Make up bed as usual.

SECOND METHOD

Three nurses can easily lift the average patient from one bed to another. The following method may also be used when moving a patient from the surgical cart to the bed.

Procedure:

Have fresh bed made up.

Fold upper bedding back to the foot of the bed, or fold lengthwise, as in an ether bed.

Place the head of the fresh bed at the foot of the bed that the patient is in, having the beds at a slight angle.

Wrap the patient in the top sheet, or in a light blanket.

Support the patient under the head and shoulders, under the hips, and at the feet.

Fig. 24.—Moving a patient from one bed to another.

Lift the patient carefully and place in the fresh bed. If the bed is on wheels, be careful not to push it from you.

Cover the patient, and remove the extra blanket (Fig. 24).

WHEN PATIENT IS TO BE CHANGED TO DIFFERENT BED FRAME ONLY

Procedure:

Remove the pillows.

Loosen bedding all around, and fold back over the patient.

Place beds together, having an assistant hold them.

Reach across empty bed, and, grasping the mattress, pull to the empty bed.

Make up bed as usual.

TO TURN THE MATTRESS WITHOUT MOVING THE PATIENT FROM THE BED

Equipment:

One extra pillow.

Small table about the height of the bed or a stool.

Procedure:

Remove pillows.

Loosen all bedding, and remove spread and one blanket.

Fold upper bedding over the patient.

Fig. 25.—Turning a mattress with the patient in bed.

Roll under bedding with rubber sheet in two longitudinal rolls close to the patient.

Bring the patient to the edge of the bed nearest to you.

The mattress may now be moved to the opposite side, half off the bed, and resting on the table or stool. An assistant stands at this side of the bed.

Place the three pillows lengthwise on the springs.

Move the patient on to the pillows, using improvised stretcher made of the bedding, which has been rolled close to the patient.

Turn mattress from top to bottom (Fig. 25).

Move the patient on to the mattress.

Remove pillows, move mattress back into place.

Make up the bed as usual.

Precautions:

If one or both beds are on wheels, great care is necessary to keep them from slipping apart.

Have plenty of assistance to prevent any possibility of accident, or fear on the part of the patient.

PULSE, TEMPERATURE, AND RESPIRATION

Purpose:

As an aid in determining the condition of the patient.

Equipment:

Weak green soap solution.

Antiseptic solution (bichlorid, 1 : 5000, or carbolic 1 : 20).

Fresh water.

Clean cotton dossils.

Thermometers.

Pad and pencil.

(Hospitals are using, more and more, the individual thermometer racks, which are most desirable.)

Method: Mouth Temperature:

Cleanse the thermometer carefully, wipe clean, and dry.

Shake mercury down to 94° F.

Place thermometer under the patient's tongue, and ask him to keep his lips closed (Fig. 26).

Leave in place *at least* three minutes, read carefully, and record.

Wash thermometer in soapy water, then in antiseptic, and last in clear water. Leave in antiseptic until ready to use for next patient.

Axillary Temperature:

Wipe axilla with a dry towel.

Place bulb of thermometer in the axilla.

Hold the arm close to the body, with the hand resting on the opposite shoulder.

At least five minutes will be required to register correctly.

The temperature will register at least one-half degree lower than if taken by mouth.

Rectal Temperature:

A special thermometer, easily distinguished from the mouth thermometer, is used. There is usually a colored bulb, red or blue, that is larger than that of the mouth thermometer.

Lubricate the bulb, and insert carefully, never using force. Have patient on his side if possible.

Hold the thermometer, as the patient may turn and so break it.

Fig. 26.—Taking pulse, temperature, and respiration.

Leave it in place *at least five minutes.*

Read and record accurately, and cleanse carefully.

Temperature will register about one degree higher than if taken by mouth.

Pulse:

While taking the temperature (by mouth) the pulse may be counted (see Fig. 26).

Let the patient's hand rest lightly on the chest.

Place fingers over radial artery, and count for one minute (Fig. 27).

Note rate, regularity, force, and tension.

(The pulse may be taken at the radial artery, at the temporal just in front of the ear, or at the facial artery, where it passes over the angle of the jaw.)

Fig. 27.—Showing position of fingers in taking the pulse.

Respirations:

With hand in same position, count the respirations.

In this way the respirations may be counted without the knowledge of the patient.

Record correctly.

Precautions:

Careful attention to cleanliness, fresh solutions, and clean dossils.

Care not to forget and leave the thermometer in the patient's mouth longer than is necessary.

Temperature will not be accurate if taken immediately after the patient has had something hot or cold in the mouth.

A rectal temperature is taken when the patient is a child, a delirious patient, a very sick patient, when there is difficulty in breathing, or when there is disease or injury about the mouth or nose.

Thermometers should be tested frequently, and compared with one of known accuracy.

Be sure that the mercury is shaken down before using.

Take the pulse with the *fingers*, not the thumb.

Have patient as quiet and comfortable as possible, never standing.

It is necessary, for accuracy, to count the respirations without the patient's knowledge, or they will, unconsciously, be altered to a certain extent.

Much dependence is placed upon the pulse, temperature, and respirations in determining the patient's condition, and the necessary care and treatment. It is, therefore, highly desirable to be strictly accurate, both as to the conditions observed, and also in recording the hours when the observations were made.

ENEMATA

CLEANSING ENEMATA

Purpose:

To relieve constipation, to relieve flatulence, to cleanse. It is also given to further or hasten the effects of a cathartic.

Equipment:

Small rubber sheet and cover.
2 bath blankets.
Bed-pan with cover.
Toilet paper.
Irrigating can with rubber tubing and enema tip.
Lubricant.
Thermometer.
2 quarts solution,* 110° to 115° F.
Basin of warm soapy water and dossils (Fig. 28).

Procedure:

Remove the pillows.
Protect the bed.
Place patient in comf ortable position (on side if possible).
Cover shoulders with bath blanket.
With second bath blanket (folded) turn clothes back to foot of bed.
Have the two blankets overlap at the patient's hips.
Lubricate enema tip.
Expel air from tube, letting fluid run until warm.
Clamp the tube, and inset enema tip very gently.
Allow the fluid to flow slowly into the rectum, holding the can not more than 2 feet above the patient.
When finished, clamp the tube, and withdraw tip carefully.

* 1. Use *mild white soap*, as strong soap is particularly irritating to the mucous membrane.

2. Unless soap solution is ordered, plain hot water or normal saline solution may be used, and will usually give as good results as the soap solution, with none of its irritating effects.

Place patient on the pan, and remove other equipment.

When pan is removed, see that the patient is left very clean, dry, and comfortable, and that the bed is dry and clean.

Carefully note the contents of the bed-pan, and record.

Precautions:

Care should be taken that the temperature is correct, and that the patient's rectum is not irritated.

Have the bed amply protected.

Fig. 28.—Enema tray.

Have the patient as comfortable as possible, and watch for signs of faintness.

After finishing see that the room is thoroughly aired, and that toilet paper, etc., are not left carelessly in sight.

Observe and report results accurately.

CARMINATIVE ENEMATA

Purpose:

To relieve flatulence.

Equipment:

Small rubber sheet and cover.
2 bath blankets.
Irrigating can and rubber tubing.
Glass connecting tube.
Rectal tube.
Lubricant.
Solution* (110° to 115° F.).
Bed-pan.
Toilet paper.
(Funnel may be used instead of an irrigating can if preferred.)

Procedure:

Mix the solution thoroughly before putting it in the can.

Protect the bed and prepare the patient in the same way as for a purgative or cleansing enema.

* **Formulas for Carminative Enemata:**

1. Turpentine ..... 0.5 ounce
   Asafetida ..... 1 dram
   Soap solution ..... 1 quart
   Egg 1

   Mix turpentine and asafetida with the egg, then add to the soap solution.

2. Magnesium sulphate ..... 2 ounces
   Glycerin ..... 2 "
   Water ..... 1 quart

3. Magnesium sulphate ..... 2 ounces
   Glycerin ..... 2 "
   Water ..... 4 "

4. Milk ..... 1 pint
   Molasses ..... 1 "

5. Magnesium sulphate ..... 2 ounces
   Sweet oil ..... 4 "
   Water, to make ..... 1 quart

6. Turpentine ..... 1 dram
   Soap solution ..... 1 pint

7. Peppermint ..... 1 dram
   Water ..... 1 pint

Lubricate the rectal tube and insert it from 4 to 6 inches, after having expelled the air from the tube.

Give in the same manner as a purgative enema.

Precautions:

Turpentine is inflammable, and must be handled with care if solution is heated over an open flame.

Turpentine burns mucous membranes, therefore must be thoroughly mixed, and given in an emulsion. It may also be absorbed, and cause kidney irritation.

Never use turpentine unless you have an order to do so.

Great care is necessary in mixing the milk and molasses enema, as molasses retains the heat, and, being heavy, is liable to sink to the bottom of the can, and so pass first into the rectum.

A patient may be seriously burned through carelessness in mixing and in ascertaining the temperature of this type of enema.

NUTRITIVE ENEMATA

Purpose:

To supply the body with food, when for some reason food cannot be taken by mouth, as in such cases as the following:

Cancer of the mouth or throat.

Stricture of esophagus.

Gastric ulcer.

Pernicious vomiting, etc.

Equipment:

Small rubber sheet and cover.

Bath blanket.

Pitcher containing solution at 105° F.

Thermometer, glass graduate, teaspoon, bowl.

Small funnel with tube, and glass connecting tip.

Catheter.

Clamp.

Lubricant.

Basin.

Pitcher of very hot water.

Procedure:

Put equipment on tray, and take to the bedside.

Protect the bed and drape patient as for an ordinary enema. (If necessary to give with the patient on her back, place a pillow under the hips and drape as for a douche.)

Lubricate the catheter, expel the air, being careful not to waste any solution; fasten clamp so that the solution just drips.

Insert catheter carefully, about 6 inches.

Keep solution at correct temperature by changing the water in the basin in which is kept the pitcher of solution.

Give slowly, taking from twenty to thirty minutes for the entire amount.

When finished, clamp the catheter, disconnect at glass connecting tube, and remove other equipment.

Leave protection for the bed under the patient.

Encourage the patient to remain very quiet for at least half an hour.

At the end of a half hour the catheter may be gently withdrawn.

Formulas for Nutritive Enemata:

1. Peptonized milk*..... 3 ounces
   Beef juice..... 2 drams
   Egg..... 1
   Salt..... 0.5 dram
2. Glucose..... 6 per cent. solution
   (Amount ordered usually 6 ounces.)
3. Glucose, Soda bicarbonate } ..... āā 6 per cent. solution
4. Glucose..... 3 drams
   Beef peptonoid..... 0.5 ounce
   Water, to make..... 6 ounces

* To peptonize milk: One powder, dissolved in 3 ounces tepid water. Add 1 pint fresh milk, and let stand in pan of water at 115° F. for two hours.

To prepare egg: Cut with a spoon, never beat, or in any way incorporate air. Stir milk into the egg slowly, add beef juice and salt. Heat in a double boiler to 105° F.

Precautions:

When giving nutritive enemata for any length of time great care is necessary to prevent irritation of the rectum. Care in inserting and withdrawing the tube, and the regular application of vaselin or some other lubricant is necessary.

A cleansing enema should be given once a day, at least one hour before giving the nutritive enema. It is usually best to give this in the morning.

Nutritive enemata may be given every six or eight hours. If given too frequently they may not be retained well. Six ounces is about as much as the average patient can retain at one time. To give more than this will often mean losing all.

MEDICATED ENEMATA

Purpose:

This is one method by which medicines may be given when either a local or a general effect is desired. The particular purpose of each enema will depend upon the solution used, and is usually designated by the name of the enema.

Equipment:

Small rubber sheet and cover.
Bath blanket.
Pitcher containing solution at 105° F.
Small funnel.
Rubber tube, glass connecting tip.
Catheter.
Clamp.
Lubricant.
Basin in which to carry equipment, and cover.

Procedure:

Put equipment on a tray or in the basin, and take to the bedside.

Protect the bed.
Turn down bedding to waist line with bath blanket.
Lubricate catheter, expel the air (do not waste solution).

Insert about 6 inches into the rectum.
Give very slowly.
Clamp the tube and remove catheter carefully.
Leave protection under the patient for at least a half-hour.
Patient should remain quiet, as solution is to be retained.

FORMULAS FOR MEDICATED ENEMATA

Stimulating Enemata:

(Stimulating enemata are usually given hot—115° to 118° F.)

Physiologic salt solution (0.9 per cent.) or strong black coffee, about 6 ounces.

Sedative Enema:

Bromid or chloral (amount ordered by physician) dissolved in about 4 ounces of water, 105° F.

Emollient Enema:

Starch solution, made as ordinary laundry starch, about the consistency of cream.

(This is sometimes given to relieve local irritation, to check diarrhea, or may be used as a vehicle for the introduction into the rectum of irritating drugs.)

PROCTOCLYSIS

Purpose:

To supply fluid to the tissues in case of hemorrhage.
To stimulate in case of shock.
To relieve thirst.
To dilute toxic substances.

Equipment:

Protection for the bed.
Irrigating can with rubber tube.*
Glass connecting tube.
Rubber catheter.

* There is a special apparatus, called the "Murphy drip apparatus," which may be used, and which simplifies the matter of regulating the temperature, and also of regulating the flow. It is supplied with an extra tube, through which gas expelled through the rectum passes up into the can.

Lubricant.
Solution (normal salt solution), 118° F.
Extension light.*
Hot-water bottle with cover.
Small basin.
Clamp for rubber tubing.
Glass apparatus for regulating flow of solution.
Standard.

Procedure:

Protect the bed.

Place the irrigating can on the table a little above the level of the bed, or hang on the standard.

Lubricate the tip.

Regulate the flow until it runs about 40 drops a minute.

Coil the tube under the hot-water bag which is placed in a bath blanket on the side of the bed near the patient.

Pass the tube under the patient's thigh, and insert the catheter gently, about 6 inches.

Adjust electric light carefully, placing it in the solution, but being sure not to immerse the bulb, as the fuse may be burned out (Fig. 29).

Cover the can.

Allow the fluid to run for two hours, then stop for two hours.†

At the end of the first hour of rest, pass a rectal tube (lubricated), one end of which is in a urinal.

Leave rectal tube one-half hour, remove, and measure amount of fluid expelled into the urinal.

Allow the patient to rest one-half hour (completing the two hours), then start solution again, as at the beginning. This procedure is continued as long as ordered.

* If an extension light cannot be used, a small bottle containing very hot water may be suspended into the solution. The water in this bottle must be changed frequently enough to keep it very hot.

† The solution may be ordered given continuously, for several hours, or it may be given for two hours, with only one hour of rest before giving again. Be sure of the particular method required in each case.

Measure solution left in the can when discontinuing the treatment, add to that expelled into the urinal, and subtract from amount which was in the can at the beginning. This will give the amount absorbed by the patient. This amount should always be ascertained and recorded.

Fig. 29.—Giving a proctoclysis.

Precautions:

It is important to keep the solution at the correct temperature. As the solution runs very slowly through the tube, it will be about body temperature when it reaches the rectum. A lowering of the temperature in the can will mean cold solution in the rectum. Regulate the flow carefully, and observe often if the flow is maintained, as feces may clog the tube, or the catheter may slip out of the rectum.

Be very sure that the patient is comfortable, and that the solution is not flowing into the bed.

Dr. Murphy is quoted as saying that "When a nurse complains that the solution is not being retained by the patient it is certain that it is not being properly given."

LOCAL ANTISEPTIC BATHS OR SOAKS

Purpose:

As a means of relieving pain, inflammation, and congestion in an infected and congested area, and also to check infection.

Equipment:

2 small rubber sheets.
Cover for rubber.
Face towel.
Bath towel.
Tub containing solution, 100° to 118° F.
Solutions may be:
Bichlorid solution, 1 : 5000 to 1 : 10,000.
Lysol, 0.5 per cent.
Salt, 0.9 per cent.
Dakin's solution, or other antiseptics as ordered.
Bath blanket.
Safety-pins.
Pitcher.

Procedure:

(Procedure will differ very slightly according to the part to which the bath is to be applied.)

If the forearm is affected, proceed as follows:

Protect the stand with a small rubber sheet.

Arrange pillows at head of bed so that the patient can lean comfortably against them in a sitting posture. (Place the patient on a back-rest if necessary.)

Have patient close to side of the bed.

Arrange bath blanket about the shoulders.

Place stand near the bed.

Place the tub so that the patient can *comfortably* let the forearm rest in the solution, being well immersed in it.

Protect the arm from resting against the edge of tub.

Cover the tub with a small rubber and a heavy blanket (placing towel in such a way that the rubber will not rest against the patient's arm.)

As the solution in the tub cools, add more, being careful to lift the arm and hand out of the solution while doing so.

Leave for half an hour, or as long as is ordered.

Remove arm from the tub, and dry with towel, or cover with dressing, as may be required.

If the patient cannot sit up, the tub must be arranged accordingly, and the bed protected with rubber and covers.

Precautions:

It may be necessary to start with a low temperature, increasing as the patient becomes accustomed to it.

Whatever temperature is to be used must be maintained, the solution not allowed to become cool.

Great care is necessary in order not to burn the patient when adding hot water.

See that the patient is in a comfortable position, one that can easily be maintained for the required length of time.

VAGINAL DOUCHE

Purpose:

To cleanse, to reduce inflammation, or to arrest hemorrhage.

Equipment:

Tray.

2 bath blankets.

Small rubber and cover.

Irrigating can and rubber tubing.

Sterile douche tip in clean basin (wrapped in cloth and boiled five minutes).

Solution 110° to 115° F. (higher temperature may be ordered).

Salt, 0.9 per cent.

Lysol, 0.5 per cent.

Bichlorid, 1 : 5000.

Boric acid, saturated solution.

Sterile water.

Other solutions and strengths as ordered.

Douche pan or bed-pan with cover.

Pitcher.

Thermometer.

Small basin.

Basin with dossils.

Procedure:

Screen bed.

Remove the pillows.

Protect bed with rubber and cover.

Fold one bath blanket in the form of a W. Ask the patient to hold the top edge of the bath blanket, and with the border of the blanket even with the fold of the bedding bring them even with the foot of the bed.

Fold the second blanket lengthwise, and cover one thigh, wrapping the blanket securely around the patient's foot.

Fold the first blanket back to cover the other thigh in the same manner.

Place the patient on the pan, and dossil the parts with soapy water or antiseptic solution.

Attach the douch tip to rubber tubing, taking care to keep the tip sterile.

Expel all air from the tube, letting solution flow until it runs warm.

Insert the tip carefully into the vagina while the solution is flowing.

Hold the can about 12 inches above the patient.

When all the solution has been used, remove the tip and wrap in the cloth in which it was previously boiled, *not* touching with the hands.

Remove the pan, and leave the patient dry and comfortable.

Note carefully, and record the character of the return flow.

Boil the douch tip five minutes before putting away.

Leave all equipment clean and in their proper places.

Precautions:

Great care to have the solution the *correct strength* and *correct temperature.*

Keep douche tip sterile. If contaminated, boil again.

See that the surface parts are cleansed before beginning the douche, to avoid carrying contaminating material into the vagina.

Be sure that the glass tip is not cracked.

The nurse should avoid contaminating her fingers, and she should scrub before and after giving the treatment.

Carefully observe and report the character of the return flow.

AURAL DOUCHE

Purpose:

To cleanse, relieve inflammation and pain, remove accumulation of wax, or to apply medication.

Equipment:

Tray.
Draw-sheet or large towel.
Small rubber.
Safety-pins.
Sterile irrigating can, with solution 105° F.
Boric acid, 2 to 4 per cent.
Saline, 0.6 to 0.9 per cent., or other solution as ordered.
Rubber tubing and sterile irrigating tip.
Large kidney-shaped basin.
Pitcher.
Thermometer.
Glass graduate.

Procedure:

Put small rubber inside the sheet or towel and pin comfortably around the patient's neck.

Let the patient hold the kidney-shaped basin under the ear if he is able; otherwise have someone assist (Fig. 30).

Hold the ear in such a way that the canal will be straightened.

Wipe off any discharge.

Attach tip to the tubing, being careful to keep it sterile.

Expel the air, and let the solution run until warm.

Insert the tip gently.

Allow the solution to run slowly, without much force, directing the stream against the wall of the canal, *not* against the drum. Have the patient hold the head slightly toward the affected side.

The can should be held not more than 8 or 10 inches above the patient's head.

When finished, remove the tip and dry the ear channel with small pledgets of cotton previously prepared.

Boil the tip, remove, and put away equipment.

Fig. 30.—Giving an aural douche.

Precautions:

Care must be taken to guard against too great pressure or uneven pressure, as either may injure the tympanic membrane and will also cause the patient distress.

NASAL DOUCHE

Purpose:

To cleanse, to relieve inflammation or to arrest hemorrhage, or to remove foreign substances.

Equipment:

Tray.
Small rubber.
Small sheet or large towel.
Safety-pins.
Irrigating can (sterile) with solution 105° F.
  Boric acid, 2 to 4 per cent.
  Saline, 0.6 to 0.9 per cent.
Rubber tubing.
Nasal irrigating tip (sterile).
Large kidney-shaped basin.
Small basin.
Sterile cotton.
Pitcher.
Thermometer.
Glass graduate.

Procedure:

Place the small rubber inside the sheet or towel and pin comfortably around the patient's neck.

Let the patient hold the basin under his nose.

Instruct the patient to breathe through his mouth, to prevent the solution from going down his throat.

Expel air from the tube, and allow solution to run until it is warm.

Instruct the patient to hold the head forward and down, and slightly inclined to the opposite side.

Insert the tip and allow the solution to run slowly without much force.

Solution should return through the opposite nostril.

Precautions:

Irrigate from the *unaffected* side.

If there is a small foreign substance in one nostril, irrigate from the opposite side. If the object is not dislodged at once, leave it, and have a doctor remove it.

Avoid force.

PHARYNGEAL DOUCHE

Purpose:

To cleanse, relieve inflammation, or to reduce swelling.

Equipment:

Small rubber.
Small sheet or large towel.
Safety-pins.
Irrigating can with solution 105° F.
Saline solution, 0.9 per cent.
Boric acid, 2 to 4 per cent.
Sodium bicarbonate or any antiseptic mouth or throat wash may be used.
Irrigating tip (sterile).
Large basin.
Mouth-gag and tongue depressors.
Towel.
Thermometer.
Glass graduate.

Procedure:

Place the rubber and cover so that it will protect the pillow and side of the bed.

Instruct the patient to breathe through the mouth, and not to swallow during the treatment.

Expel air from the tube and let solution run until it is warm.

Turn the patient's head to one side and place the basin under his jaw, so that drainage can run into the basin.

Irrigate the throat, not allowing the solution to run with too much force.

Precautions:

Guard against the patient swallowing any of the solution.

Watch the patient's expression, and if he seems distressed, discontinue the treatment for a moment, as it may be difficult for him to refrain from swallowing.

Do not use much force, and be sure that the temperature is correct.

CARE AND USE OF HOT-WATER BAG

Purpose:

Hot-water bags afford a convenient method of applying dry heat to relieve pain, congestion, to relax muscles, to act as a counterirritant, or may be used as a means of keeping moist compresses hot.

Equipment:

Hot-water bag and cover.

Pitcher.

Thermometer.

Procedure:

Test the temperature of the water in the pitcher, then pour into the hot-water bag, filling it about one-third full. The amount depends upon the purpose.

Flatten the bag (without twisting) until all air is expelled and then screw in the cork firmly (Fig. 31).

Remove all moisture from the surface of the bag and place in the cover.

Apply to the area; see that it is kept hot by frequently changing the water.

The temperature which is usually used is about 118° or 120° F.

Precautions:

The careless use of the hot-water bottle has resulted in serious burns to the patients. A leaking bottle may cause a scald even when the water is not intensely hot. This is particularly true of babies, old people, or paralytics.

If a temperature higher than 120° F. is required, great care must be taken that no burn results. Watch for undue redness of the skin. A cover should always be used.

Care of Rubber Bags:

Never pour boiling or extremely hot water in a rubber bag.

Do not twist the neck of the bottle when expelling the air.

Be careful, when screwing in the cork, not to spoil the thread, but screw in straight.

Fig. 31.—Filling hot-water bag.

When putting away, empty the bag, leave some air to keep the inner surfaces from adhering, screw in the cork, and hang up the bag.

Do not leave near extreme heat, as a radiator or register.

TO FILL ICE-BAGS

Purpose:

To apply continuous cold to an area in order to reduce inflammation, relieve pain, lessen swelling, to check the growth of bacteria, or to arrest hemorrhage.

Equipment:

Basin.
Strong canvas bag.
Mallet.
Piece of ice.
Ice-cap.
Cover.
Towel.

Procedure:

Place the ice in the canvas bag, using the mallet to break it into small pieces.

Place ice in the basin, and allow a little cold water to run over it, to remove sharp edges which would cut the rubber.

Fill the ice-cap, letting it rest flat upon the table, so that air will be expelled.

Screw in the cap, remove moisture from surface of bag, and place in the cover.

Apply where required.

Precautions:

Always watch for leakage. The rubber in ice-bags is very thin, therefore easily cut by sharp pieces of ice and careless handling.

Never apply an ice-bag without a cover unless ordered to do so. The intense cold next the skin for any length of time is destructive to the tissues.

If the bag is to be applied to some tender part, or to the chest, do not fill very full, as weight is undesirable.

By the use of a towel, binder, or bandage secure the bag so that it will stay in place and not annoy the patient.

Do not allow the bag to become warm. Ice is to be applied, not a warm compress.

Be sure that the rubber washer is in place. Otherwise the bag will leak.

Care of Ice-bags:

These require the same care as hot-water bottles. In addition, dry inside carefully and powder. This keeps the rubber from sticking together. Screw in the cap carefully. Do not leave near heat.

RUBBER RINGS

Purpose:

To form an air-cushion which may be used to relieve pressure on some irritated or tender part of the body.

Equipment:

Rubber ring of the desired size.

Cover for rubber ring.

Procedure:

Open the valve and blow up the ring until it is about one-third to one-half full.

Close the valve quickly and test for leakage.

Place in the cover, and adjust to the position required by the patient, being sure that the valve is so placed that the patient will not lie on it.

Precautions:

Be sure that the ring is so placed that no pressure whatever comes on the injured or tender area.

Care of Rings:

As for other rubber goods. Leave a small amount of air in the ring, and do not fold at a sharp angle, as rubber tends to crack where it is folded.

ICE COIL

Purpose:

A convenient method of applying cold.

Equipment:

Standard.
Ice coil.
Irrigating can with water and ice wrapped in gauze.
Glass connecting tip.
Clamp.
Pitcher.
Towel.
Large jar.
Rubber sheet or paper to place under the jar.

Procedure:

Connect one end of the coiled tubing with the tubing of the irrigating can.

The other end of the coiled tubing is to drain into the jar, which is placed on the floor convenient to the bed.

Protect the area to which the coil is to be applied by a towel or compress.

Adjust the coil comfortably, and allow the water to flow through slowly.

See that the supply of water and ice in the can is kept up, and that the jar is emptied as required.

Precautions:

See that the patient is warm and comfortable, that the bed does not get damp, and that the area to which the cold is applied does not become cyanosed from too prolonged an application of cold.

DRAINAGE PADS

Purpose:

To absorb drainage.

To absorb excretions from the rectum and bladder when they are discharged involuntarily.

Equipment:

Piece of wrapping paper a little larger than the size of finished pad desired.

Piece of old muslin same size as paper.

Cotton substitute or oakum.

Needle and thread.

Procedure:

Fold paper in about 2 inches all around.

Fill with the cotton substitute and oakum.

Cover with the muslin and sew the muslin to the paper.

Place pad where it is required.

NOTE: If there is a disagreeable odor from the discharge, it is better to use oakum, as it absorbs odor.

Always have extra pads ready to replace soiled ones.

CARE OF RUBBER GOODS

All rubber goods should be cleaned and dried before putting away.

Oil ruins rubber. Never bring in contact unless absolutely necessary. In this case, wash off as soon as possible with warm soapy water. Do not use scouring soap, as it, too, ruins rubber.

Heat destroys rubber. Do not place on or near a hot radiator to dry. Do not put boiling water in rubber.

Powder the inside of ice-bags, or put a piece of cotton inside after drying. This keeps the surfaces from adhering.

Clean, dry, and powder both inside and outside of rubber gloves. Muslin pockets, which allow the gloves to lie full length and keep them separate, are best.

Rubber rings, hot-water bags, etc., should have air left in them to keep the surfaces separate.

Do not boil hard rubber.

Stomach-tubes should be rinsed first in cool water, then in warm soapy water. If used for more than one patient, it should be boiled three minutes. Hang the tube up to dry, but do not allow it to bend at a sharp angle.

Do not fold rubber sheets, etc., as they will crack along the line of the fold.

Do not allow tubing to remain bent, as the rubber will soften and be useless at this point. The same thing happens if clamps are left on rubber tubing.

APPLICATION OF A LARKSPUR CAP

Purpose:

Used in the treatment of pediculosis capitis.

Equipment:

Protection for the table.
Basin of bichlorid, 1 : 1000.
Comb.
Fine comb.
Tincture of larkspur.
Large piece of old muslin (large enough to make a turban).
Safety-pins.
Towel.

Procedure:

Protect the table.

Place large towel or small sheet under the patient's head.

Comb hair first with the large comb, then with the fine comb.

Notice the comb carefully for presence of pediculi, dipping the comb in the bichlorid solution to confine and destroy the pediculi.

Part the hair, and apply the tincture of larkspur with a piece of old linen, being careful to get it over all the scalp.

Cover the hair with the piece of muslin, applying it as you would a triangular head bandage. Be sure that the hair is completely and securely confined within the cap (Fig. 32).

Leave from eight to twelve hours, then wash and fine comb the hair.

Precautions:

Guard against scattering pediculi, or getting them on yourself.

Do not get any of the solution in the patient's eyes.

NOTE: Nits are very difficult to destroy and to remove from the hair. Hot vinegar and soap or kerosene are very useful.

Where there are nits the hair must be watched and fine combed almost daily, as the nits or eggs hatch.

Fig. 32.—Application of a larkspur cap.

When for any reason it is not desirable to use larkspur, grease may be used, or kerosene, although kerosene is apt to be irritating to the scalp unless rinsed with oil.

METHOD OF GIVING A SHAMPOO TO A PATIENT IN BED

Purpose:

In preparation for certain operations, as those of the eye or ear.

For ordinary cleanliness and comfort.

To assist in removing pediculi.

Equipment:

Rubber pillow-case.

Rubber to be used as a cape or apron.

Rubber to protect stand.

Face cloth.

Face towel.

Bath towel.

Safety-pins.

Liquid soap.

Bath-tub.

Pitcher of water, 110° F.

Brush and comb.

Protection for the floor.

Bath blinket.

Procedure:

Turn bedding to waist line with bath blanket.

Place rubber case and muslin case on one pillow, and place under the patient's head.

Make a cape of the small sheet and rubber and pin around the patient's neck, rubber side out, and arranged to form a trough, the free end falling into a tub placed on the floor.

Wet the hair thoroughly with warm water, and apply soap.

Brush the scalp, using plenty of soap, or rub with the face cloth.

After washing the scalp bring the patient close to the edge of the bed, and pour water over the hair, washing thoroughly.

Rinse the hair well. Use cold water the last time unless the patient desires otherwise.

Squeeze as much water as possible out of the hair.

Place warm bath towel on the pillow, remove the rubber cape, and bring the patient back on the pillow.

Rub the scalp and the hair, and spread the hair over the pillow so that it will dry.

Dry the hair thoroughly. See that the patient does not get chilled during the process.

Precautions:

Have the patient as comfortable as possible while you are working.

See that the room is warm before you start, and that the patient does not get chilled.

Rinse all soap out of the hair, and dry the hair thoroughly.

POULTICES

FLAXSEED POULTICES

Purpose:

To promote suppuration, to localize infection, and to relieve local congestion.

Equipment:

Poultice board.
Piece of old muslin.
Saucepan.
Large spoon.
Flaxseed.
Oil.
Teaspoon.
Tray.
Sodium bicarbonate.
Lubricant for the skin.
Old towel.
Oiled muslin.
Bandage.
Hot plate or hot-water bottle.

Procedure:

Stir slowly into boiling water enough flaxseed to make a paste. Boil until thick, or until it drops from the spoon.

Add about a dram of oil, and a pinch of sodium bicarbonate.

Have the tray ready, and the piece of old muslin, the desired size, spread on the plaster board.

Beat poultice until very light. Spread on the cloth about $\frac{1}{2}$ inch thick, depending upon the area to which it is to be applied (Fig. 33).

Cover quickly, and place on the hot plate or water bottle (Fig. 34).

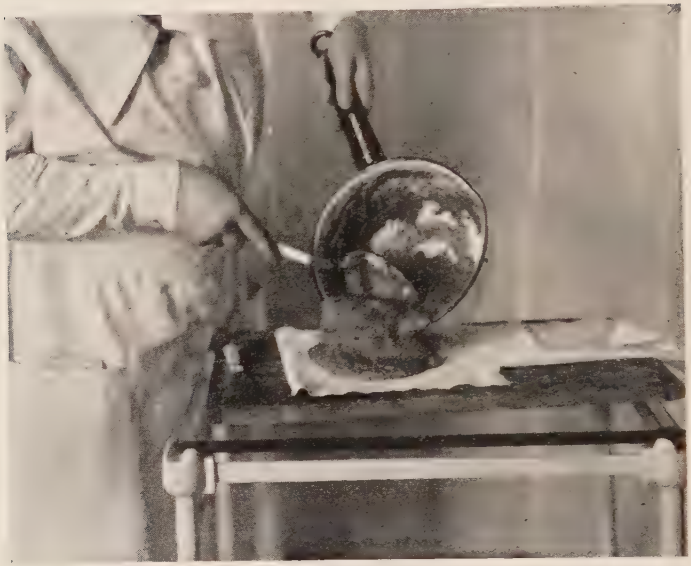

Fig. 33.—Preparation of a flaxseed poultice.

Fig. 34.—Flaxseed poultice ready to apply.

Oil the surface of the skin, and apply slowly, being sure not to burn the patient. It is well to test the temperature of the poultice on your own wrist before applying.

Cover with a flannel or a piece of rubber between the folds of an old towel.

Make secure by applying a binder, or pinning an old towel over the part.

Change every half-hour for as long as ordered, or apply as ordered. Large poultices will not need change as frequently as small ones, but must be kept very warm to be effective.

Precautions:

Work quickly.

Leave poultice on only until desired results are obtained.

Protect the skin by using a lubricant, and watch carefully to avoid burns.

Change the poultice *before* it becomes cool.

DIGITALIS POULTICE

Purpose:

May be ordered in cases of nephritis to stimulate the kidneys.

Equipment:

Digitalis leaves, and equipment as for other poultices with exception of flaxseed, oil, and sodium bicarbonate.

Procedure:

Add hot water to just cover the leaves, and allow to simmer until soft.

Break into a pulp.

Spread the pulp between the folds of muslin.

Apply over the region of the kidneys.

NOTE: Flaxseed poultice may be made with the water from steeping the leaves, and the leaves added to the poultice.

YEAST POULTICE

Purpose:

To stimulate granulations in old, infected wounds, difficult to heal.

Equipment:

Old piece of muslin.
Poultice board.
Brewer's yeast.
Binder and safety-pins.

Procedure:

Spread the yeast on the poultice cloth about $\frac{1}{4}$ to $\frac{1}{2}$ inch thick.
Apply to area to be covered, and make secure with binder.

STARCH POULTICE

Purpose:

Sometimes ordered in skin affections to allay irritation.

Equipment:

Muslin.
Poultice board.
Ordinary cooked laundry starch, thick enough to drop from a spoon.

Procedure:

Spread *warm* starch paste on muslin and apply.

SOAP POULTICE

Purpose:

May be ordered to cleanse the skin before an operation, or to cleanse a part not possible to cleanse otherwise, such as extremely dirty feet, that resist ordinary methods of cleansing.

Equipment:

Gauze large enough to cover the area.
Warm green soap solution.
Binder and safety-pins.

Procedure:

Wet the compress in the soap solution and apply.
Cover with the binder and secure with safety-pins.

ANTIPHLOGISTIN

Purpose:

Same as a flaxseed poultice, to which it is sometimes preferred.

Equipment:

Antiphlogistin may be spread on muslin or old linen and applied.

Binder and safety-pins.

(A piece of flannel or a hot-water bag, or both, may be used to retain the heat longer.)

Procedure:

Place the can of antiphlogistin in a pan of boiling water, and make very hot. Stir to insure even heat.

Spread on a piece of muslin about $\frac{1}{4}$ inch thick.

Apply to the part, the antiphlogistin next the skin.

Cover and secure with a binder.

The paste is usually left on until it dries (twelve to fourteen hours).

COUNTERIRRITANTS

Purpose:

Irritation of some part of the skin, by means of which deep-seated irritation, inflammation, and pain are relieved.

For explanation of the action of counterirritants, and the degree of action, see "Action of Counterirritants" in text-book.

Materials Used:

Iodin, turpentine, mustard, and ammonia are among the most common drugs used. Dry cupping, application of simple heat, as the hot-water bag, and use of the thermocautery are physical methods of producing counterirritation.

IODIN

Equipment:

Small tray.

Bottle of iodin (strength ordered either 4 or 7 per cent.).

Absorbent cotton.

Basin for waste.

Forceps or sponge stick.

Procedure:

Make small cotton swabs by winding firmly around end of sponge stick, or held in forceps.

Either pour iodin over the sponge, or put small amount of iodin in an ounce glass, and dip sponge into it.

Outline the area to be painted.

Paint the area, painting in one direction only, not allowing the strokes to overlap.

When first coat is *dry*, more may be applied if desired, painting in an opposite direction.

Precautions:

Iodin is an alcoholic preparation, and an old solution, from which alcohol has evaporated, may be very strong and cause burns.

Never apply iodin to a wet surface, or allow wet cloths, water, etc., to come in contact with the painted surface.

Do not cover the painted area closely; if evaporation is prevented, it is liable to blister.

NOTE: If too much iodin has been applied, or it is desired to remove it, use alcohol, which will quickly dissolve the iodin.

MUSTARD FOOT-BATH

Purpose:

To relieve congestion and pain in some other part of the body, as in colds, headaches, painful menstruation.

To induce sleep.

Equipment:

2 small rubber sheets and one cover.

Large blanket.

Bath towel.

Foot-tub with water at 110° to 112° F.

Mustard (1 to 1½ tablespoons to 1 gallon of water).

Piece of old muslin.

Tablespoon.

Pitcher.

Hot-water bag.

Ice-bag (not always necessary).

Procedure:

Use about 1½ gallons of water.

Tie mustard in piece of old muslin (or dissolve thoroughly in warm water).

Dissolve mustard in water.

Protect table with rubber sheet.

Turn bedding back at foot of bed to above the patient's knees, replacing with a bath blanket.

Protect the bed with a small rubber and cover.

Move the patient's feet to one side of the bed.

Place the tub of water about the center of foot of bed.

Lift the patient's feet and place slowly into the water.

Fig. 35.—Patient having a mustard foot-bath. A heavy blanket covers the tub and the bedding has been brought down over this blanket.

Fig. 36.—Method of adding hot water during mustard foot-bath.

Cover the tub with the blanket, tucking slightly under the tub, to prevent sagging into the water (Fig. 35).

Bring the bedding down over the blanket.

As the water in the tub cools, add more, at about 130° F., raising the patient's feet before putting the water in (Fig. 36).

The bath should last about twenty minutes.

Put the bath towel at the side of the tub, and place the patient's feet on the towel, covering immediately.

Remove the tub.

Dry the patient's feet thoroughly.

Bring the bedding down with the blanket, and arrange.

Leave a hot-water bag at the patient's feet.

Precautions:

Remember that there is danger of burning the patient.

Keep the patient well covered, and avoid drafts.

Watch the patient's condition, and if there is any tendency to faintness, discontinue the bath at once.

An ice-cap may be used to counteract any such tendency.

Undissolved mustard may burn the skin.

Be sure that the bed is dry, and that the patient is comfortable when you leave him.

MUSTARD PASTE

Purpose:

Mustard is often used as a counterirritant in congestion, pain, and inflammation of the chest.

Equipment:

Plaster board.
Piece of old linen or muslin.
Bowl or basin for mixing.
Mustard.
Flour.
Cotton.
Piece of flannel.
Binder.
Tablespoon.
Knife or spatula.
Small tray with hot plate or hot-water bottle.
Small dish of oil or other lubricant.

Procedure:

Use 1 part of mustard to 3 or 4 parts of flour.

Make a paste with *warm* water that will spread easily, but not thin enough to run.

Spread on a piece of muslin twice the desired size of the paste.

Turn in generous edges all around, and fold over to thoroughly confine the mustard.

Oil the surface to which it is to be applied.

Warm the paste on a hot plate or over a hot-water bag.

Cover with a protector, which may be a towel or a piece of flannel.

Leave on until the skin is reddened to the desired degree.

After removing the paste, oil the skin and cover with a towel.

Precautions:

Be sure that the paste is not strong enough, or left on long enough, to blister the skin. Burns caused by mustard are painful and difficult to heal.

NOTE: If the skin is very tender, use 1 part of mustard to 5 or 6 parts of flour. If for a child, use 10 to 12 parts of flour. If the mustard is mixed with the white of an egg it is not so apt to blister tender skin.

When mustard is mixed with *hot* water the volatile oil is evaporated, and thus the valuable constituent of mustard is lost. Tepid water only should be used.

TURPENTINE STUPES

Purpose:

To relieve pain and reduce tympanites.

Equipment:

Tray.

Bath blanket.

Abdominal binder.

Oiled muslin.

Three pieces of flannel.

Stupe wringer.

Pitcher of scalding water.

Small dish containing turpentine and oil (1 part of turpentine to 2 or 4 parts of oil, or equal parts, as ordered).

Cotton.

Procedure:

Turn bedclothes back to waist line with bath blanket.

Place abdominal binder under the patient.

Fig. 37.—Applying turpentine stupes.

Have oiled muslin or rubber tissue and flannel conveniently near the patient.

Apply the turpentine and oil mixture to the abdomen with cotton swabs.

Place one piece of flannel in the stupe wringer and pour scalding water over it.

Wring very dry.

Shake out and apply carefully to the abdomen (Fig. 37).

Cover with second piece of flannel, with rubber tissue, and secure by pinning binder in place.

These may be applied fifteen minutes out of every hour, being changed every five minutes.

Solution of turpentine and oil to be applied every third hour.

If continuous stupes are ordered, apply solution every hour, and change flannels every fifteen minutes.

When changing stupes always have the fresh hot stupe ready before removing the one from the abdomen.

When stupes are removed, leave warm flannel over the part.

Precautions:

Avoid exposing the patient or uncovering the abdomen even for a moment.

Wring cloths so dry that there will be no danger of scalding the patient, or of getting the patient or the bedding wet.

Be sure that the turpentine and oil are in the correct proportions, and thoroughly mixed.

DRY CUPPING

Purpose:

Counterirritation to relieve congestion in pneumonia, acute nephritis, edema of the lungs, etc.

Equipment:

Tray.
Glass cups with very thick, smooth edges.
Jar with cotton.
Alcohol lamp.
Applicators.
Small basin for waste.
Small dish of water.
Towel.
Matches.
Bottle of alcohol.
Wool blanket.
Lubricant.

Procedure:

Place the patient in a comfortable position.

Protect the bedding, the patient's gown, and hair by draping with towels and the woolen blanket.

Oil the surface of the skin.

Dip the swabs in alcohol, ignite, and hold while burning inside the inverted cup to create a vacuum.

Apply *quickly* to the skin, not allowing time for loss of vacuum.

Leave until the skin is as red as desired (never a dusky red).

Remove by pressing the skin down carefully with the ball of the finger, allowing the air to enter, and releasing the cup.

Precautions:

Protect all cotton and linen from possible contact with flame, as there is great danger of fire. Keep the bottle of alcohol at some distance from the flame. Avoid allowing the edges of the cups to become hot, and so burning the patient. Do not apply cups twice in the same place. Apply cups so that you will obtain a uniform counterirritant action over the region.

APPLICATION OF VARIOUS TREATMENTS TO THE EYES

DOUCHING THE EYE

Purpose:

To cleanse, to relieve inflammation, or to check infection.

Equipment:

Small sterile basin containing the solution at 100° F. (usually boric acid 2 per cent.) (Fig. 38).

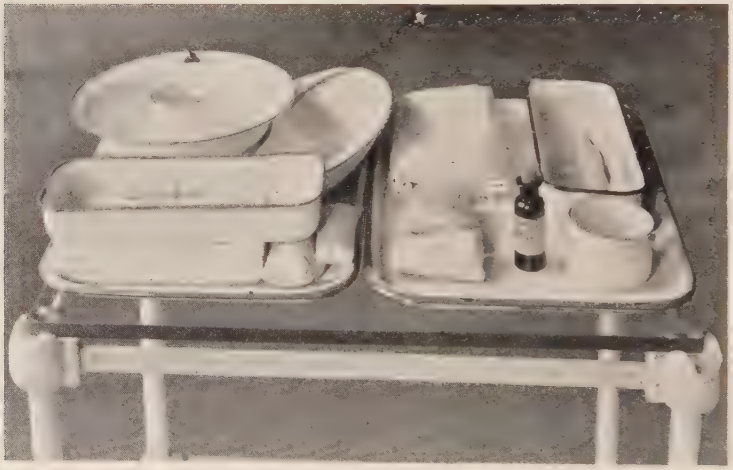

Fig. 38.—Trays for douching the eyes and for application of medication to the eyes.

Sterile medicine-dropper.

Sterile cotton.

Towel.

Paper bag.

Procedure:

Have the patient seated with his head held very slightly backward.

Remove any discharge from around the eye.

Fill medicine-dropper with solution, not allowing it to run back into the rubber cap.

Hold eyelids apart and place cotton in such a way that it will absorb all overflow (Fig. 39).

Hold under lid out and flush toward outer angle of the eye.

Hold the dropper parallel with the cornea, *not* pointed at it, supporting in such a way that even though the patient moves it cannot touch the eye.

Use cotton sponge once only, then discard into the paper bag or a small basin.

Fig. 39.—Douching the eye.

Precautions:

Avoid making any pressure on the eyeball.

Be careful not to hold the patient's head at an uncomfortable angle, or to point the medicine-dropper toward the eyeball.

If one eye only is affected, protect the other with a dressing of non-absorbent cotton held in place by adhesive. A watch-crystal makes a good protection.

Scrub hands thoroughly before and after caring for the eyes, and avoid touching your own face or eyes.

APPLICATION OF DROPS TO THE EYE

Purpose:

To apply medication to the eye for local effects: to dilate the pupil and paralyze the ciliary muscles, to contract the pupil, to relieve inflammatory conditions, or to produce local anesthesia prior to operation.

Equipment:

Solution as ordered.

Clean medicine-dropper (usually a special dropper which also serves as a cork to the bottle of solution (Fig. 38).

Clean cotton.

Fig. 40.—Application of medication to the eye.

Procedure:

Stand at the side of the patient.

Pull the lower lid down, thus forming a "pocket" (Fig. 40).

Have the patient look up, and gently place 1 drop on the

inside or mucous surface of the lower lid, near the outer corner of the eye.

Release the lid, and place a small piece of cotton over the entrance to the nasal duct, holding it firmly for two or three minutes (this is to prevent the drug from passing into the nasal chamber where it would be absorbed, causing, in the case of certain drugs, serious systemic symptoms).

Precautions:

Do not allow the dropper to touch the eye; hold it in such a way that, even though the patient moves, this cannot happen.

Be very sure that the solution is correct, both as to kind and strength. Patients have lost their sight through mistakes of this kind.

Be careful that none of the solution passes to the mucous membrane of the nose.

Cleanliness, both in materials used and in the care of the hands, is essential.

APPLICATION OF POWDER TO THE EYE

Equipment:

Wooden applicator or toothpick.

Cotton.

Powder.

Procedure:

Wind cotton around the applicator, making it fluffy.

Dip it in the powder, separate the eyelids, and dust the powder over the affected area by gently tapping the applicator with the middle finger of the right hand.

Lower upper eyelid gently over the eyeball, and keep the eye closed for a short time.

APPLICATION OF OINTMENT TO THE EYE

Equipment:

Tube of ointment.

Toothpick and cotton, if ointment is not in a tube.

Procedure:

Pull down the lower eyelid, and press the ointment from the tube, laying it gently on the mucous membrane of the lower lid.

Close the eye, and instruct the patient to roll the eye so that the eyeball may be well covered.

Light massage may sometimes be applied to distribute the ointment.

If ointment is not in a tube:

Wind cotton tightly on a toothpick, having the end well covered.

Put ointment on the applicator, pull the lower eyelid down, and place the ointment just inside, on the mucous membrane.

APPLICATION OF ICE COMPRESSES TO THE EYE

Purpose:

To relieve pain, to prevent and relieve inflammation, to check suppurative changes.

Equipment:

Pledgets of absorbent cotton, or of old soft linen or gauze, about 2 inches square, or large enough to nicely cover the eye.

Large piece of ice in a basin, or placed on wire mesh or gauze tied over a bowl.

Paper bag to hold discarded compresses.

Procedure:

Place several pledgets of moist cotton or compress on the ice, allowing them to remain until well chilled.

Apply one (or two if both eyes are affected) over the closed lids.

Change about every one or two minutes.

If the eyes are not infected, the compresses may be used over again.

Have plenty of compresses on the ice, so that the cold may be kept constantly on the eye.

If eye is infected, discard compresses, using a fresh one each time.

Scrub hands thoroughly before and after caring for eyes.

APPLICATION OF HEAT TO THE EYE

Purpose:

To prevent inflammation, relieve pain, to promote the absorption of inflammatory products, or to hasten suppuration in the later stages of inflammation.

Equipment:

Several pledgets of absorbent cotton or other light compress material a little larger than the eye.

Bowl of hot solution (sterile water or boric acid solution, 115° to 120° F.).

Electric stove or alcohol lamp to keep the solution at the desired temperature, or place the bowl of solution in a larger bowl of very hot water.

Paper bag.

Tube of vaselin.

Towel.

Procedure:

The patient should be lying down, and, for convenience, near the side of the bed.

Apply vaselin over the lids and around the area to be covered.

Wring or press compresses fairly dry, as surplus water may scald.

Apply over the area firmly yet without pressure. Change every one or, at most, two minutes, as they cool rapidly. This should be kept up from fifteen to thirty minutes as ordered.

After removing the last compresses dry the area carefully.

Do not use soiled compresses the second time.

Consider all discharges as contagious, and treat accordingly.

Precautions:

Hot compresses should be kept *hot*, as the effect of *warm* or *cool* compresses is totally different, and much harm may be done

by applying a temperature to the eyes that the condition does not indicate.

Avoid leaving the eyelids damp after removing the compress, as moisture evaporates, chilling the part.

Avoid any transfer of infection. Be scrupulously clean when caring for the eyes.

APPLICATION OF COLD COMPRESSES TO THE HEAD

Purpose:

To relieve pain or to reduce inflammation.

Equipment:

Large piece of ice in a basin, or placed on wire mesh over the basin (Fig. 41).

Fig. 41.—Tray for applying ice compresses to head.

Compress material or gauze several thicknesses, large enough to well cover the area.

Rubber case to protect the pillow.

Towel.

Procedure:

Wring out compresses fairly dry, place on ice until chilled.

Place one compress on the patient's forehead, leaving one on the ice. Change frequently, keeping one always on the ice.

Precautions:

Avoid allowing the water to drip from the compresses.

Do not allow the patient to become chilled.

INHALATIONS

Purpose:

Used for local action on some part of the respiratory tract.

To stimulate respirations.

To stimulate heart action.

To relieve distressed cardiac conditions (angina pectoris).

Equipment and Procedure:

According to method employed, as follows:

To give a steam or medicated inhalation for local action on the respiratory tract.

No. 1: Make a canopy over the head of the bed, using a screen as a frame, covered with blankets to shut out in part the escape of steam. Leave an opening at either the side or the back, through which the steam may be directed.

A croup kettle with a long spout may be used, the solution kept boiling by an electric stove or alcohol lamp on the bedside table.

Great care must be taken that the steam does not come too near and so scald the patient, also care must be taken to guard against fire if an alcohol lamp is used.

Medication may be added to the boiling water; usually tincture of benzoin is ordered (1 dram to 1 pint).

NOTE: There are several methods by which the "canopy" may be improvised. The idea to be kept in mind is that the arrangement used will allow the patient to breathe the steam without danger of scalding, and that ventilation without drafts is allowed, avoiding giving the patient a "steam bath."

No. 2: An ordinary tea-kettle may be used, with a funnel attached to the spout. Cotton soaked in the drug may be placed in the spout of the kettle.

No. 3: If the patient is not in bed a pitcher of boiling water may be placed on a stand or chair, at a comfortable height for

the patient, and a bath towel or bath blanket placed over the pitcher and the patient's head. This will soon cool, and will need to be renewed.

INHALATIONS FOR GENERAL OR SYSTEMIC ACTION

No. 1: Stramonium may be ordered for asthma patients. The stramonium may be burned in a small dish, and the patient inhale the fumes.

No. 2: The fumes of ammonia or smelling salts may be used to stimulate a patient in case of fainting or to relieve some forms of headache.

The patient may inhale the fumes from the bottle, or a small amount may be placed on a clean handkerchief or piece of gauze, and held near the patient's nose.

No. 3: Amyl nitrite may be used to relieve the distress caused by angina pectoris. The pearl may be broken in a handkerchief or fold of gauze, and held to the patient's nose.

SOME OF THE DRUGS WHICH MAY BE USED IN INHALATIONS

Tincture of benzoin compound, 1 dram in 1 pint of water (or 1 quart).

Peppermint, 10 drops to 1 quart of water.

Eucalyptus, 1 dram in each quart of water.

Turpentine, 10 drops in each quart of water.

(Turpentine must be used cautiously, as it burns easily.)

NOTE: Benzoin stains are difficult to remove from both linen and utensils, therefore care must be taken in its use. It is better to use an old pitcher for such a solution.

Stains may be removed by ether or denatured alcohol.

SPECIAL CARE OF THE PATIENT'S MOUTH

Purpose:

The mouth requires careful attention at all times, but in some diseases there is a particularly great tendency to dryness and cracking of the mucous membrane of the tongue and lips, of infection, collection of sordes, foul breath, etc.

The following treatments are intended to offset these tendencies, to keep the patient's mouth clean, moist, free from infection, and cracking of mucous membrane. It is both for comfort and for prevention of disease.

Equipment:

Small tray.

Glass of fresh water.

Glass of mouth-wash.

Applicators wound with cotton, and tongue depressors (in corked test-tubes).

Ointment for the lips.

Paper bag for waste.

Small kidney-shaped basin.

Towel.

Procedure:

Place towel about the patient's neck.

Have patient's head turned toward you, and place basin so that he may expectorate into it without effort (Fig. 42).

Dip applicators into the mouth-wash and clean the teeth thoroughly. (A number of applicators will be necessary.)

Cleanse thoroughly between the gums and the cheeks.

Clean the tongue and the roof of the mouth.

Allow the patient to rinse the mouth with antiseptic solution, and, if desired, with clear fresh water.

If the patient's lips are dry or cracked, apply a thin coating of cold cream, vaselin, or lemon juice and glycerin.

If the patient has a high temperature the mouth should be cleansed before and after each feeding.

If the patient is unconscious it will be necessary to hold the mouth open with a tongue depressor or mouth-gag.

Fig. 42.—Care of the patient's mouth.

Work with great care and gentleness.

Keep all equipment perfectly clean, and boil utensils after use.

Precautions:

If the patient has a communicable disease, the tray and all equipment must be kept isolated and used only for this patient. If possible, it is better to have separate equipment in all cases.

COLD SPONGE

Purpose:

To reduce the temperature, to quiet the nervous system.

To act as a tonic to the heart and circulation.

Equipment:

One large rubber sheet.

One small rubber and one rubber pillow-case.

Two bath blankets.

Five face cloths.

Face towel.

Bath towel (large).

Bath-tub with water 70° to 80° F. (or 10 to 20 degrees below body temperature, as ordered).

Bathing alcohol in a basin of hot water.

Powder.

Ice-bag with cover.

Hot-water bottle with cover.

Procedure:

Take the patient's temperature, pulse, and respiration.

Remove pillows, replace one, with rubber protection.

Bring bedding down, covering the patient with a bath blanket.

Place the second bath blanket and the rubber sheet under the patient.

Place ice-bag to the head and hot-water bottle to the feet.

Wring the bath towel out of cold water, and drape over the patient's chest, abdomen, and groin.

Remove the upper bath blanket from the part being sponged.

Wring four wash cloths out of cold water, and place one in each groin (leave fairly wet); these should be changed frequently.

Have face cloth almost dripping wet, and sponge each part with long quiet strokes.

After sponging, each part should be well rubbed.

Work quickly to prevent chilling the patient.

Repeat the alternate sponging and rubbing two or three times on each part.

Cover with the blanket and remove the drape.

When thoroughly dry, turn the patient on his side, and sponge the back, rub with alcohol until dry, then powder.

Remove the lower blanket and rubber.

Replace the patient's gown, adjust upper bedding, remove the blanket.

Refill the hot-water bag and leave the patient comfortable.

Take the temperature, pulse, and respirations one-half hour after the bath.

The bath should take from twenty to thirty minutes.

Precautions:

Avoid chilling the patient either by exposure, slow working, or leaving him damp.

Avoid all unnecessary exposure, using screens if necessary.

Be considerate of your patient's mental as well as his physical comfort.

NOTE: Special attention should be given to sponging on the *inner* surfaces of the thighs and arms. The large blood-vessels are just underneath, and the skin is thinner in these areas, therefore results will be attained more quickly. In some cases it is desirable to add to the equipment a basin containing pieces of ice, which are used to gradually cool the water in the tub.

ALCOHOL SPONGE

Purpose:

See Cold Temperature Sponge.

Equipment:

Two bath blankets.

Towel.

Face cloth.

Rubber sheet and rubber pillow-case.

Small rubber to protect stand.

Hot-water bag with cover.

Ice-bag with over.

Basin of water 70° to 80° F., containing 4 to 6 ounces of alcohol.

Procedure:

Take the temperature, pulse, and respiration.

Remove the pillows, replacing one with rubber protection.

Fold bedding down with bath blanket, in same manner as for a bed-bath.

Turn the patient on her side, and place bath blanket and rubber under her.

Remove the gown, place hot-water bag and ice-cap.

With a fairly wet wash cloth (not dripping) bathe the body in sections, with long soothing strokes, followed by rubbing, also with long soothing strokes.

The patient's face and hands should be bathed first, then the neck, chest, arms, abdomen (do not rub the abdomen), thighs, and legs.

Particular attention should be given the axillary spaces, the groin, inner surfaces of arms and thighs, and spaces under the knees.

Turn the patient on her side, and bathe and rub the back.

Remove bath blankets, replace gown, arrange upper bedding, refill hot-water bag, and leave the patient comfortable.

Take temperature, pulse, and respiration one-half hour after the sponge.

Precautions:

Be sure that the room is warm before beginning the sponge.

Watch the pulse carefully.

If the patient has typhoid, she should be moved as little as possible, and all effort on her part should be avoided.

Leave the patient dry, warm, and comfortable.

Avoid all unnecessary exposure; use screens whenever necessary.

COLD TOWEL PACK

Purpose:

See Temperature Sponge.

Equipment:

Rubber sheet and rubber pillow-case.

Small rubber to protect stand.

3 bath blankets.

8 bath towels.

Tub of water, 70° to 80° F.

Hot-water bag with cover.

Ice-bag with cover.

Bathing alcohol in a basin of hot water.

Procedure:

Take the pulse, temperature, and respiration.

Remove the pillows, replacing one with rubber protection.

Turn bedding back with a bath blanket.

Remove the patient's gown, and place it where it will be kept warm.

Turn the patient on her side, and place the rubber sheet and bath blanket under her.

Place the ice-cap to the head and the hot-water bottle to the feet.

Have one towel in the tub, ready to wring out.

While the patient is still on her side apply friction to the back, making the skin glow.

Wring out the towel, and apply quickly to the back, leaving it there during entire procedure.

Turn the patient on her back.

Apply friction, followed quickly by application of the wet towels, to the arms, chest, abdomen (do not rub the abdomen), and lower limbs (Fig. 43).

When the whole body is covered, remove the bath blanket.

Change the towels in the order of their application (except the back), applying brisk friction, as in the beginning.

Repeat two or three times on the *anterior* part of the body.

Cover with a warm bath blanket, and remove the towels.

Rub with warm alcohol.

Turn the patient on her side, and remove the wet towel.

Rub the back with warm alcohol.

Fig. 43.—Cold towel pack.

Remove rubber and bath blanket from under the patient.

Turn the patient on her back.

Bring up bedding with bath blanket.

Replace gown.

Refill hot-water bottle.

Leave patient comfortable and remove equipment.

Take temperature, pulse, and respiration one-half hour after the pack.

Precautions:

Be sure that the room is warm, and avoid drafts.

Give brisk friction that will bring the blood to the surface.

Work quickly and avoid chilling the patient.

If the patient shivers or shows real signs of chilliness, cover warmly and give brisk friction, discontinuing the pack.

Do not forget to screen your patient while you are working.

COLD SHEET PACK

Purpose:

See Temperature Sponge.

Equipment:

Same as for Towel Pack, substituting *two sheets* for the eight bath towels.

Procedure:

Take the pulse, temperature, and respiration.

Remove the pillows, and replace one with rubber protection.

Turn down bedding with a bath blanket.

Place rubber sheet, covered with two bath blankets, under the patient.

Remove the patient's gown.

Place the ice-bag at the head and the hot-water bag at the feet.

Place two sheets in the tub of water.

Wring out one sheet, and wrap around the patient, tucking in well around the arms and at the sides.

Cover with the second wet sheet, removing the top bath blanket at the same time.

Tuck in well at the neck, under the axilla, close to the body of the patient, and between the thighs.

Bring the right side of the first blanket across the patient, and tuck in on the left side, doing the same with the left side of the blanket, and with the second blanket. Place the third blanket over the patient.

In this way none of the wet sheet is uncovered.

Cover with a sheet or a bed spread.

Leave in the pack twenty to thirty minutes.

Give the patient a drink of water frequently.

When removing from the pack rub well with warm alcohol, and avoid any exposure or opportunity for chilling.

Take the temperature one-half hour after the pack.

Precautions:

As for Towel Pack.

COLD CHEST PACK

Purpose:

As for other cold packs. May be used especially in pneumonia, and in some heart conditions, as a tonic to the circulation.

Equipment:

Rubber sheet.
Bath blanket.
Woolen blanket.
Two bath towels.
Ice-bag with cover.
Hot-water bag with cover.
Tub of ice-water.

Procedure:

Protect the bed in the region of the chest with rubber sheet covered with the bath blanket.

Remove the patient's gown.

Place ice-bag to the head and hot-water bag to the feet.

Wring bath towels out of ice-water and wrap around the chest and back to the waist, leaving the arms out.

Cover the towels with the woolen blanket.

Keep in the pack from twenty minutes to one-half hour.

Take the temperature before the pack and one-half hour after. Towels may be changed two or three times.

Note the effect upon the quality and rate of the pulse.

HOT FOMENTATIONS

Purpose:

To reduce inflammation.

To soften fibrous tissue.

To cause muscular relaxation.

Equipment:

Rubber sheet (size to cover area treated).

2 small bath blankets.

Compress material (flannel, small bath blanket, or bath towel).

Wringer.

Basin or tub (according to size of compress).

Hot-water bags.

Vaselin.

Procedure:

Place rubber between the two bath blankets, and place under the part affected.

Lubricate area to be covered.

Place compress material in wringer.

Pour boiling water over compress.

Wring them out, shake quickly, and test heat on your forearm.

Place carefully, being careful not to burn the patient.

Cover with the first dry bath blanket.

Place hot-water bags outside this first blanket.

Bring up rubber sheet and second bath blanket.

Safety-pins may be used to hold blanket in place.

NOTE: When, as is often the case, the treatment is to be continued for an hour or more, an extra piece of flannel will be needed, as the compress in use is not to be removed until the fresh one is ready.

Refill hot-water bags if necessary.

Precautions:

Care must be taken not to burn the patient, also to avoid exposure of the part when compresses are changed.

The part should be left warmly covered when the final compress is removed.

HOT PACK

Purpose:

To increase circulation, to relieve kidney congestion.

To increase the activity of both the kidneys and the skin, thereby increasing elimination.

To relieve muscular tension and spasm, to quiet the patient.

Equipment:

5 bath blankets.

3 large blankets.

2 towels.

Hot pack rubber (large size).

Rubber pillow-case.

Rubber to protect stand.

Ice-cap with cover.

Hot-water bottle with cover.

Hot pack wringer (an ordinary clothes-wringer may be attached to the tub).

Bath-tub with scalding water.

Bathing alcohol in basin of warm water (may be brought later).

Procedure:

Remove the pillows, and replace one protected with the rubber case.

Place one bath blanket on the radiator to warm.

Turn bedding down with a bath blanket (as when giving bath).

Place two heavy blankets (with the rubber sheet between) under the patient (Fig. 44).

Place one bath blanket under the patient (this may be done at same time heavy blankets are placed).

Remove the patient's gown.

Fig. 44.—Preparing a patient for a hot pack.

Fig. 45.—Patient in a hot pack.

Tuck the bath blankets all around the patient, between the arms and the body, and between the thighs.

Have ice-cap ready to place on the head.

Place two light bath blankets in the tub of hot water.

Wring out very dry. (If no wringer is available, place in a strong sheet and twist dry.)

Empty the tub quickly, and take blankets to the bedside in the dry tub.

Turn the patient on her side.

Place one blanket under the patient, and one over her, working very rapidly.

Bring first heavy blanket, then rubber, then second blanket up over the patient separately, tucking in snugly and neatly.

Place the third heavy blanket over the patient, tucking in around the patient.

Place a clean towel over the top of the blankets to protect the patient's face.

Apply the ice-cap to the head.

Place the hot-water bags at the feet (outside the blankets).

Bring bedding up over the patient, arranging neatly (Fig. 45).

Watch the pulse very carefully, taking frequently.

Give hot drinks if the patient is able to take them.

Leave patient in the pack about twenty to thirty minutes if no ill effects are shown.

TO TAKE THE PATIENT OUT OF THE PACK

Turn bedding down, and remove the first heavy blanket, and place warm bath blanket over the patient.

Loosen blankets and remove wet ones.

Turn patient on her side and remove all but the blanket which is *under the rubber sheet.*

Fold dry blankets loosely over the patient, and bring bedding up again.

Refill hot-water bag and replace at the feet.

Remove equipment.

Leave patient in this way for at least half an hour, during which time she should perspire.

Watch closely, as when in the pack. Warm drinks may be given.

At the end of this period, turn the bedding down, and give the patient a good rub with warm alcohol.

Arrange bedding, remove blankets, refill hot-water bottles.

Precautions:

Work must be done very rapidly, and in warm surroundings.

Great care must be taken to avoid exposure to the cooler air, especially when taking the patient out of the pack, when the greatest harm can result from carelessness.

If undesirable effects result, place warm blankets over the patient and remove the wet ones, avoiding any exposure.

In case of convulsions, loosen the blankets, but do not remove until after the convulsion has ceased.

GASTRIC LAVAGE

Purpose:

To empty the stomach in case of poisoning.

To remove the contents of the stomach for diagnostic purposes.

To relieve extreme nausea, distress from gas, overdistention, etc.

Equipment:

Tray.

Large pitcher with 2 to 6 quarts of solution,* 100° to 106° F.

Small pitcher for pouring.

Basin containing ice or ice-water and stomach-tube.

Kidney basin.

Mouth-gag (may or may not be required).

Dressing rubber and draw-sheet to protect patient and bed.

Rubber apron.

Protection for floor.

Gauze handkerchiefs for the patient.

Paper bag for soiled handkerchiefs.

Jar or pail for the return flow.

Procedure:

Place the stomach-tube on ice or in ice-water.

Have all equipment at the bedside.

Place jar on the floor near the bed (protect the floor).

Protect the patient and bed with the dressing rubber and sheet.

* **Solutions** which may be used:

Soda bicarbonate, 5 per cent.

Normal salt solution.

Plain warm water.

Solutions containing chemicals, as permanganate of potassium or other antidotes for poisons.

Pass the tube carefully 16 to 18 inches, asking the patient to swallow constantly. Patient's head should be slightly forward (Fig. 46).

Do not force the tube; wait for any muscular spasm of the esophagus to cease, asking the patient to swallow.

Fig. 46.—Gastric lavage.

After the tube is in place, fill the funnel, and keep full, until about 1 pint has been given (never any more than this at one time).

Pinch the tube below the funnel, invert over the jar, and siphon fluid back.

Refill the funnel and wash stomach again.

Repeat until fluid returns clear, or until the amount ordered has been used.

Pinch the tube firmly, and withdraw quickly, placing it in the basin.

Cleanse the patient's mouth and face with gauze handkerchief.

See that patient is comfortable.

Remove and clean equipment.

Note carefully the nature of return flow, and report. (If in doubt, save contents of jar for inspection.)

Precautions:

Any appearance of blood in the return flow is an indication to stop the treatment at once, and withdraw the tube.

When inserting the tube avoid touching the back of the pharynx, as this causes gagging.

Avoid introducing tube into the larynx (watch patient's color, breathing, and notice if air escapes from the funnel, indicating that the tube is in the larynx.

Do not hurry or startle the patient, but make her as comfortable as is possible under the circumstances.

GAVAGE

Purpose:

To provide nourishment for the patient when for some reason she cannot or will not take food in the usual manner.

Equipment:

Tray:

Small pitcher in basin of hot water.

Basin with ice for stomach-tube.

Kidney basin.

Protection for the patient.

Gauze handkerchiefs.

Liquid food (milk, eggs in milk, beef juice, or any concentrated liquid nourishment).

Procedure:

Proceed as for stomach lavage.

When tube has been inserted, pour in the warm (105° F.) liquid food (slowly).

When all the solution has been given, withdraw the tube carefully (first pinching the tube to avoid any dripping into the larynx).

Precautions:

As when giving lavage.

In both cases the tubes should be carefully washed in cool water, both inside and out, then in soapy water. If the tubes are to be used for other patients, they should be boiled from one to three minutes. The boiling will not be necessary if the tube is kept for one patient.

NASAL FEEDING

Purpose:

This method may be used for forced feeding when the use of the stomach-tube is not practical, as in diseases and operations of the jaw, and in cases of insanity. This method is always used for infants and children.

Equipment:

Large catheter and funnel.

Lubricant.

Liquid food in a small pitcher in basin of hot water.

Protection for the patient.

Procedure:

Lubricate catheter, and pass carefully through the nostril, through the throat, and into the esophagus.

Attach the funnel, and hold to the cheek to test if any air is passing out. (Air passing out, or a whistling sound, indicates that the tube is in the trachea.)

When tube has been properly inserted, pour the liquid food in slowly.

Keep the tube as still as possible to avoid irritation and vomiting.

When finished, pinch the tube and withdraw quickly.

Precautions:

Great care must be taken that the tube is in the esophagus, not in the trachea.

Be careful to pinch the tube before removing it, to avoid the dripping of liquid into the trachea.

COLON IRRIGATION (ENTEROCLYSIS)

Purpose:

To relieve the lower intestine of irritating substances.

To relieve flatulence and to check diarrhea.

To reduce temperature.

To relieve dysentery.

To destroy worms.

Equipment:

Two bath blankets.

Small rubber and cover.

Protection for the floor.

Large jar or pail for return flow.

2 rectal tubes (medium or small size).

Irrigating can and rubber tubing.

Clamp for tubing.

2 connecting tips.

Lubricant.

Basin.

Solution. (Both the nature of the solution and its temperature will depend upon the purpose for which it is given, and will be ordered.)

Procedure:

Turn the patient on her side, and bring well to the edge of the bed, with the upper leg flexed.

Drape patient with two bath blankets, as when giving a cleansing enema.

Place protecting rubber and cover under the patient's hips, allowing part of it to hang over the edge of the bed, to protect the mattress.

Place the jar or pail beside the bed (protect floor).

Lubricate the two rectal tubes, and insert both at the same time, inserting one tube (which is to be connected with the irri-

gating can) about 6 inches, the second tube (which is to drain into the jar) inserted about 4 inches. If tubes are marked before insertion, one 6 and the other 4 inches from the tip, there will be no difficulty or confusion.

When tubes are properly inserted and attached, allow the fluid to flow in very slowly.

When the solution returns clear, or amount ordered has been given, remove the tubes.

Apply vaselin or ointment to the rectum to prevent irritation.

Note the character of return flow.

Remove and clean equipment.

If the irrigation was given to reduce temperature, take the temperature one-half hour after the treatment.

NOTE: The temperature of the irrigation when given for dysentery, colitis, diarrhea, or flatulence may be from 110° to 118° F.

If to reduce temperature, it may be ordered 10 to 20 degrees below that of the body.

Normal saline, plain water, or medicated solutions may be used.

Some hospitals provide special tubes for irrigations, making it unnecessary to insert two rectal tubes.

CATHETERIZATION

Purpose:

To empty the bladder when the patient cannot void.

To obtain a sterile specimen.

Following certain operations, when it is not desirable to have the patient void, or when much urine in the bladder would be harmful.

To empty the bladder immediately preceding some operations.

Equipment:

Tray.

Rubber protection and cover.

2 bath blankets.

2 catheter basins.

3 or 4 sterile catheters (glass, silver, or rubber).

Basin for urine.

Extension light.

Cotton dossils.

Dressing towel.

Sterile lubricant (not always used).

Procedure:

Place catheters with dossils in basin with plenty of water.

Cover with the second basin, and boil five minutes.

Drape the patient as for a douche.

Place rubber protection and cover between thighs and where basins will be placed.

Screen the bed, and arrange extension light.

Place the equipment convenient to the bed, and allow the catheters to cool.

Scrub hands thoroughly, using clean brush, orange-wood stick, soap, and running water.

Each hand should be scrubbed at least three minutes, giving careful attention to each part—the nails and between the fingers, etc., also scrubbing the wrists and forearms.

Have an assistant place the basins—the specimen basin between the thighs, close to the vulva; the empty basin covering the sterile catheters, next, to receive the used dossils and catheters; last, the basin containing the catheters and dossils (Fig. 47).

Do not touch anything unsterile with the right hand.

Wrap sterile pledget of cotton around the first finger and thumb of left hand (or use sterile finger-cots).

Fig. 47.—Patient prepared for catheterization.

With this thumb and finger separate the labia, exposing the meatus.

With the right hand take a dossil from the basin, drain excess water into the empty basin, and cleanse the vulva, dossiling *down*, and discard dossil (use once only).

Repeat until the external parts are clean, leaving the last dossil over the orifice of the vagina.

Pick up a catheter (*never touching the end to be inserted*) and

insert gently into the urethra; $1\frac{1}{2}$ or 2 inches is all that is necessary as a rule.

After the urine has ceased to flow, pinch the catheter (if rubber) or place finger-tip over end if glass, and withdraw gently.

Dossil the patient again, and leave dry and comfortable.

Remove equipment, measure urine, and chart results.

Precautions:

Great care must be taken that nothing unsterile comes in contact with the catheter.

If a glass catheter is used, observe whether the glass is cracked.

A glass catheter that has boiled dry should never be used, as the glass will be brittle, and may break.

A glass catheter should never be used for children, for delirious or restless patients, in pregnancy, or following certain operations.

No force must be used in inserting the catheter.

Avoid any unnecessary exposure, and keep the patient warm. Chilliness and nervousness will contract muscles and make the procedure more difficult, as well as more uncomfortable for the patient.

TO OBTAIN A STERILE SPECIMEN

Equipment and Procedure:

Same as for ordinary catheterization, except that a sterile receptacle must be provided, and the urine must be kept sterile. Such a specimen should go immediately to the laboratory.

NOTE: In some hospitals argyrol, 20 per cent., is always used. In this case the argyrol should be in a wide-mouthed bottle, and the first 2 inches of the catheter dipped into the solution just before inserting into the bladder.

When a lubricant is used, it should be in a wide-mouthed jar into which the tip of the catheter can easily be dipped, or in a collapsible tube, when a small amount can be squeezed on the eye of the catheter.

A very good method of handling the catheter is to have a pair of sterile forceps (boiled with the catheters), using these to pick up the catheter (if rubber) near the end to be inserted, and therefore not touching the catheter with the fingers until after it has been inserted in the urethra.

A glass catheter should be inserted with the curved end pointing upward, and allow it to gently follow the curve of the urethra. Never insert farther than just enough to allow the urine to flow.

BLADDER IRRIGATION

Purpose:

To reduce inflammation and infection of the bladder (cystitis).

Equipment:

Equipment as for catheterization, with addition of:

Sterile basin.

Sterile pitcher with sterile solution* (usually boric acid 4 per cent.) at 100° to 110° F. (covered).

Sterile funnel, rubber tubing, and glass connecting tip.

Sterile towel for cover, and sterile drapings.

Douche pan (or large basin for return flow).

Procedure:

Proceed as for catheterization, using rubber catheter, receiving the urine into a separate receptacle if it is desired to save a specimen or to measure amount.

Do not remove the catheter.

Attach the sterile tubing and funnel by means of the sterile connecting glass to the catheter, after allowing a small quantity of fluid to run through, expelling the air.

Fill the funnel with solution, and allow it to flow gently into the bladder.

Do not allow the funnel to become empty.

From 1 to 4 ounces (rarely larger amounts) may be allowed to enter the bladder at one time.

Siphon back into the basin or douche pan, and while the solution is still flowing from the funnel fill again.

Repeat until the solution returns clear.

* **Solutions:**

Boric acid, 2 to 4 per cent.
Normal salt solution.
Bichlorid of mercury 1 : 20,000.
Potassium permanganate.
Argyrol.

Finish as for a catheterization.

Observe and record character of return flow and amount of solution used.

NOTE: A silver two-way catheter is sometimes used, providing for a continual inflow and outflow of the solution.

Instead of a pitcher and funnel a douche bag or irrigating can is used in some hospitals. In this case the tubing is detached from the catheter to allow return flow.

Precautions:

Observe great care to keep all sterile articles sterile.

Handle the funnel in such a way that it will not become contaminated. Never allow enough fluid to enter the bladder to cause the patient great distress. The lining of the bladder is extremely sensitive when diseased or inflamed, and even small quantities cause distress.

Avoid introducing air into the bladder.

BLADDER INSTILLATIONS

Purpose:

Method of introducing medication in the treatment of cystitis, inflammation, etc.

This treatment often follows a bladder irrigation.

Equipment:

Preparation as for catheterization or bladder irrigation, adding:

Sterile funnel, tubing, and glass connecting tip.

Sterile medicine-glass.

Medication as ordered.

Procedure:

Cleanse the mouth of the bottle containing the solution with alcohol, and do not touch bottle or anything else to the sterile medicine-glass.

If treatment is following an irrigation, pour the medication (amount and strength ordered) into the funnel, and allow to flow slowly into the bladder.

Finish as for catheterization.

If no irrigation is given, first catheterize the patient, and without removing the catheter, attach the funnel, and pour medication slowly into the bladder.

Precautions:

Note and report if the patient complains of pain, as the solution may be too strong.

PREPARATIONS FOR SURGICAL OPERATIONS

Purpose:

To thoroughly cleanse the area of operation, making it as nearly surgically clean as possible without unnecessary irritation of the skin.

Equipment:

Tray.
Razor (safety or straight).
Basin for dossils.
Basin for waste.
Sterile cotton.
Tincture of green soap.
Ether.
Alcohol.
Iodin (if ordered) may be 4, 5, or 7 per cent.
Small jar for iodin.
Electric-light extension.
Sterile towels.
Abdominal binder.
Safety-pins.
Paper squares.
Hemostat.

Procedure:

Before beginning the preparation the patient should have had a cleansing bath, particular attention having been given to the field of operation. Before an abdominal operation the abdomen should be carefully cleansed and the umbilicus made perfectly clean. If the patient is very dirty, it may be necessary to apply a soap poultice, leaving this on for some time before proceeding with the usual preparation.

Most hospitals have their routine orders for preparations, some surgeons preferring one method, and some another. These orders should be followed carefully. In each method the under-

lying principle will be the same: to make the area clean and safe for operation, with as little irritation to the skin as possible.

Screen the bed.

Drape the patient, the method depending upon the part to be prepared for operation, and the necessity of keeping the patient warm.

Shave the part, using dossils wet with green soap solution (if for a *wet* preparation).

Cleanse the skin with whatever solution is ordered (alcohol, ether, gasoline, iodin, etc.).

If iodin is applied, it should never be put on a moist skin, as it will cause a blister. (See directions for application of iodin on page 88.)

After the skin dries, cover with a sterile towel, and apply the abdominal binder to hold it securely in place.

NOTE: Sometimes the iodin or other solutions are not applied until the patient is in the operating-room, the only preparation being to thoroughly cleanse the skin, and shave the part carefully.

Precautions:

It is a disgrace for a nurse to send a patient to the operating-room who is not clean, or who is carelessly prepared. See that the parts are shaved thoroughly, and that the skin is not cut while doing so.

Be most careful not to burn or blister the patient by the careless application of iodin. Do not stain linen with iodin.

Avoid any unnecessary exposure of the patient, and do not allow her to become cold or chilly. Make all preparations as quietly, carefully, and as quickly as possible. Have everything ready before beginning to work.

BEFORE TAKING THE PATIENT TO THE OPERATING-ROOM

Comb or brush the hair, braiding in two braids.

Remove any false teeth, plates, etc., from the mouth. (See that these are placed in water, in a safe and clean place.)

Put on the patient's stockings, slippers, kimona, and, if cold, underclothing.

See that any jewelry, money, etc., that the patient may have is either taken care of by the patient's family, or placed in safe keeping.

Take the patient to the operating-room in a wheel chair, or on a stretcher, as the case requires. In some cases the patient may walk. Usually this last is not wise, as the patient may be faint and tired from lack of food, worry, etc.

Bring back the patient's clothing from the operating-room and put away properly.

Do not leave your patient alone in the anesthetic or the waiting room. If the routine work does not allow you to stay, see that another nurse takes charge of your patient before you leave her. Consider your patient first, last, and always.

SURGICAL DRESSINGS

Purpose:

For cleanliness and comfort.

To prevent infection.

To protect from injury.

Equipment:

Dressing carrier or tray.

Set of sterile instruments: probe, forceps, scissors, and other instruments as required.

Basin with antiseptic solution and dossils.

Package of sterile towels.

Sterile supplies: gauze, cotton, bandage, etc.

Adhesive stick.

Bandage scissors.

Tube of iodoform gauze.

Sterile safety-pins.

Sterile vaselin.

Extra supplies for individual cases, as aristol, silver nitrate, Dakin's solution, etc.

Rubber gloves (for some cases).

Procedure:

As in the case of preparation for surgical operations, each hospital will have its own routine methods. However, the underlying principles will be the same, even though methods may differ.

Abdominal Cases:

Turn the bedding back, to just below the dressing.

Cover the fold of bedding with a sterile towel, folded under the sheet, and next to the patient.

Another sterile towel, folded over the patient's gown just above the dressing, is desirable (Fig. 48).

Breast Cases:

Drape one sterile towel across the shoulder, one across the opposite side, and one below the incision, making a triangular opening.

Foot or Hand:

Raise the limb and put a sterile towel beneath it, directly under the wound.

Place basins for soiled dossils on the foot of the bed, or within convenient reach of the one doing the dressing.

Fig. 48.—Tray and preparation of patient for abdominal dressing.

Have dossils ready in solution ordered (bichlorid of mercury, 1 : 5000, is commonly used).

Unpin bandages and remove outer dressing.

Cleanse the wound and surrounding area with dossils, always working *away* from the wound.

Have dressings ready, and handle sterile gauze with sterile instruments.

Place sterile dressings carefully over the wound, and secure with bandages or adhesive straps.

Drainage cases may require fresh sterile tubes, and irrigation may also be required.

If the doctor is to do the dressing, the nurse should remove the outer dressings, open the instruments, and leave them within easy reach on a sterile towel or container.

Have everything in readiness, and anticipate the requirements of the doctor who is doing the dressing.

After the fresh sterile dressing has been applied, make secure with adhesive straps or bandage.

Precautions:

When it is necessary to remove adhesive from the skin, use benzine, alcohol, or ether. Cleanse carefully and completely, and apply vaselin or powder to prevent irritation.

If in the ward, always screen the bed before beginning the dressing.

Avoid allowing the patient to become chilled (pneumonia develops easily in postoperative cases).

Keep everything that may come in contact with the wound absolutely sterile.

When doing several dressings, do the clean cases first and the infected cases last.

Handle dossils, instruments, etc., with care, disturbing the wound as little as possible.

If there is an irritating discharge, sterile vaselin or the like may be applied to the skin close to the wound to prevent skin irritation.

If there is much drainage or irrigation is to be done, extra rubber protection may be required.

Wounds that are draining freely should be reinforced frequently, as a saturated dressing is not impervious to bacteria.

Never do a dressing when the air is dusty from sweeping, bed making, etc.

Try to avoid having the patient see the open wound, as it is very upsetting to some patients.

FEEDING A HELPLESS PATIENT

Purpose:

Your aim should be to have the patient get the required nourishment with the least possible fatigue and discomfort, and with as much enjoyment as possible.

Equipment:

Extra pillows for the patient.

Tray with dishes and food arranged as attractively as possible.

Glass drinking tubes or invalid cup.

Procedure:

Arrange the patient as comfortably as possible, with the head and shoulders slightly elevated if this is allowed.

See that the surroundings are clean (do not allow basins, soiled dishes, soiled towels, etc., on any part of the stand).

Arrange the tray conveniently on the stand.

Have a clean napkin or a clean towel to protect the bed.

When everything is ready, sit down, and take whatever time is necessary.

Never hurry your patient.

When feeding with the spoon, give small amounts only, and give your patient time to finish before offering more (Fig. 49).

Give the patient the food in the order in which she will most enjoy it, and do not forget to give her a drink.

When giving tea, coffee, soup, or other hot liquids, be very careful not to burn the patient. This is more apt to happen when giving hot liquids through a tube, as the food is taken in quickly, and without opportunity to test the temperature with the lips.

See that food which is intended to be hot, is hot, and that food intended to be served cold, is cold.

Have the food seasoned to the patient's taste, unless seasoning is to be eliminated from her diet.

Fig. 49.—Feeding a patient.

Try to make the meal hour as pleasant and restful to your patient as possible.

METHOD OF SERVING CRACKED ICE

Purpose:

When the mouth is dry and parched, and the patients cannot take the amount of water desired, they will frequently derive great comfort from allowing small pieces of ice to melt in the mouth.

In fevers and after surgical operations it may be particularly desirable, though it is apt to increase thirst.

Equipment:

Tray with a tray cloth, or a plate.

Tumbler or small bowl with gauze over the top, tied, or secured by a rubber band.

Small pieces of ice placed on the gauze (Fig. 50).

Fig. 50.—Cracked ice ready to serve.

Teaspoon.

Place conveniently for the patient.

GIVING MEDICATION BY HYPODERMIC

Purpose:

To obtain rapid action of the drug given.

To give medication when it is not possible or wise to give it by mouth.

Equipment:

Hypodermic tray, with the following articles:

Alcohol lamp may be attached to a solid base (Fig. 51).

Fig. 51.—Hypodermic tray with equipment.

One or two spoons.

Hypodermic syringe and needles.

Bottle of alcohol.

Sterile pledgets of cotton.

Sterile hypodermic tablets.

Small box of matches.

Procedure:

Clean the syringe. If glass, it may be boiled one minute; if metal, with a rubber washer, clean with alcohol, alternately drawing it into the syringe and expelling.

Boil the needle in the spoon.

Boil water (distilled is best) in a spoon, and drop the hypodermic tablet into it. (Be sure to have just the correct amount of water; 15 minims is usually plenty.)

Fig. 52.—Expelling air from the hypodermic syringe.

When the tablet is dissolved, draw the solution into the syringe.

Pick up the needle by the screw end, being careful not to contaminate the part that will pierce the skin, and screw it carefully into place.

Cover the needle with a sterile pledget of cotton wet in alcohol, and carry to the bedside.

Fig. 53.—Method of inserting the hypodermic needle.

Fig. 54.—Method of injecting the medication.

With a second pledget of cotton wet with alcohol cleanse a small area of the skin, rubbing rather briskly to bring the blood to the part (upper and outer part of the arm or thigh).

Remove the cotton from the needle, hold syringe straight, press the piston gently until all air is expelled (Fig. 52), 1 or 2 drops of fluid have been expelled (not more).

Grasp a portion of the skin and underlying tissue between the thumb and finger, holding in such a way that the skin will be perfectly smooth and tight (Fig. 53).

Quickly insert the needle at a slight angle, putting it in its full length (Fig. 54).

Withdraw needle very slightly and press the piston, forcing the fluid slowly and gently into the tissues.

Withdraw the needle and cover the part quickly with a cotton pledget wet with alcohol; massage very gently in order to hasten distribution and absorption.

Sterilize the syringe and needle before putting away, being careful that the needle is dry, and that the wire is in the needle.

Leave hypodermic tray completely ready for instant use.

Precautions:

Have everything sterile. Remember the danger of abscesses from carelessly prepared and carelessly given hypodermics. Be careful to expel all air. The injection of air into the tissues will cause pain, and may be a source of danger. Take every precaution against breaking the needle in the tissues. Breaking may be caused by the sudden movement of the patient or the contraction of a muscle.

When a needle is put in straight, especially into a large muscle, as in the hip, the needle is liable to break.

Do not give more solution than necessary, as the pressure causes pain and destruction of tissue.

When giving solutions of irritating drugs they should be given deep into the muscle.

When giving drugs that are already in solution, be sure that these are sterile, and kept so. Bottles of such solutions may have rubber tops, and if so, these can be cleansed by wiping with alcohol, then the needle passed through the rubber top into the solution, the amount required being drawn up into the syringe.

BATHING A BABY—TUB BATH

Purpose:

Cleanliness and comfort.

Equipment:

Small tub (preferably rubber).
Bath thermometer.
Castile soap.
Wash cloth (light material, gauze or cheese-cloth).
Boric acid solution.
Soft bath towel.
Olive oil or some good baby talcum powder, unscented.
Rubber apron.
White apron to cover rubber apron.
Clean clothing for the baby.
Small screen to protect the baby from drafts.
Soft hair-brush.
Safety-pins or needle and thread.

Procedure:

Fill bath-tub three quarters full of water (98° F. when giving first tub bath, reducing to 85° F. by the time the baby is one year old).

Adjust screen to protect the baby from drafts.

Remove clothing.

Wash the face with clear water and dry gently without rubbing (patting dry).

Make a soapy lather on wash cloth and soap the baby's head and body.

Immerse the baby in the tub of water, first placing the left hand under the left axilla, allowing the forearm to serve as a support for the head and shoulders.

Sponge the scalp with the wash cloth.

Sponge entire body, giving special care to the creases, also reaching under and sponging the back.

Lift the baby from the tub with the left arm in the same position, and the right supporting the feet.

Lay the baby on your lap and dry gently with the towel, being careful that all creases are dry.

Either olive oil or powder may be applied, oil preferred.

If powder is used, brush off all surplus powder, being careful not to leave any, especially between folds of the skin.

Make small pledgets of cotton, dip in olive oil, and clean the nostrils by rotating the pledgets in them.

Clean navel with cotton dipped in boric acid solution.

Clean nails with toothpick or orange-wood stick, cutting when necessary.

If eyes are secreting, wipe lids gently with cotton dipped in boric acid solution, wiping outward, away from the nose.

If tongue is coated, sponge gently with cotton dipped in boric acid solution, otherwise leave alone.

Give the genitals special care:

If a male child, retract the foreskin gently with the thumb and forefinger, clean the glans with boric acid and cotton, bringing the foreskin forward again.

If a female child, clean labia with cotton and boric acid, wiping toward the rectum. Finish by applying olive oil.

Dress the baby, putting the clothes on over the feet, and arranging the clothing so that the dress and petticoats may be put on at the same time.

Precautions:

Handle the baby as little as possible.

Keep the baby's head clean or a crust will form, and the baby's head is apt to become sore.

A baby is not usually given a tub bath until after the navel is dry and healed, which is usually at the end of the third week.

Keep the baby comfortably warm, and protect from drafts.

Avoid hot water and direct heat from fireplace or heater, as the baby's skin is very easily burned.

A burn or scald may be fatal to a baby.

NOTE: Boric acid solution is made up by adding 2 ounces of boric acid to 1 pint of boiled water.

PREPARATION FOR ADMINISTRATION OF SALVARSAN

Purpose:

Salvarsan is used in the treatment of syphilis, sleeping sickness, relapsing fever, malaria, anemia, and other diseases.

Equipment:

Same equipment as that used for Intravenous Medication and Transfusion (see p. 155), with addition of:

Salvarsan.

Sterile saline solution.

Procedure:

The patient is prepared and the treatment carried out with the same apparatus and the same aseptic precautions as when giving transfusions or intravenous medication.

Precautions:

The same as for intravenous medications.

Stomach and bowels should be empty.

Have the patient rest quietly following the treatment.

Watch carefully for symptoms of reaction.

Note all urine passed, as suppression frequently occurs.

LUMBAR PUNCTURE

Purpose:

To remove cerebrospinal fluid for diagnostic purposes or to relieve pressure.

To introduce medication directly into the spinal canal.

Equipment:

Tray, containing the following:

Alcohol.

Iodin.

Local anesthetic.

Sterile gauze.

Sterile towels.

2 sterile lumbar puncture needles.

Sterile glass syringe (10 to 30 c.c.).

Sterile specimen basin.

3 or 4 sterile test-tubes for fluid.

(If the patient is to have a local preparation, added equipment will be required.)

Procedure:

The patient is turned on his side, with his back to the edge of the bed.

Have the patient flex his knees, and bend shoulders forward.

Draw up the gown (unless open at the back) and arrange bedclothing so that the lumbar region will be exposed, and clothing out of the way.

Place a bath blanket over the shoulders.

Cleanse the area with antiseptics.

Drape the exposed part with sterile towels.

Place the tray with required articles in a convenient place.

Assist if required, and observe carefully the patient's condition.

NOTE: The puncture is usually made between the fourth and fifth lumbar vertebræ, as the liquid and bacteria tend to gravitate at this portion of the neural sac. This also brings the puncture below the spinal cord, and the anatomy of the lumbar vertebræ makes it easier to introduce the needle at this point.

Precautions:

Keep articles sterile.

Have the patient in a comfortable position.

If in the ward, screen the bed.

INTRAVENOUS MEDICATION

Purpose:

To supply the body with fluid after hemorrhage or shock.

To slow and strengthen the heart action.

To obtain the full and immediate action of drugs.

Equipment:

Tray, with the following:

Torniquet.

2 hemostats.

2 pieces rubber tubing.

2 glass connecting tips.

Tube carrier.

Hypodermic with cocain, 2 per cent.

Rubber sheet.

Surgical pad or ether sheet.

Sterile towels.

Sterile sponges.

Alcohol.

Iodin.

Collodion.

Sterile aspirating needle.

Flask of sterile solution (as ordered).

Sterile instruments: thumb forceps, probe, scissors, scalpel, skin needles.

Catgut.

Procedure:

Place the patient in a comfortable position (the arm and forearm only need be exposed), as the solution is injected either into the median cephalic or the median basilic vein at the bend of the elbow.

Place rubber-covered dressing with sterile towel under the patient's arm.

Place tourniquet around arm well above the elbow.

Cleanse the skin at the point where the needle is to be inserted.

Place the flask containing the solution (at 120° F.) in the proper position and connect the end of the tubing to the needle.

Expel all air before inserting the needle into the vein. (This procedure is usually done by the physician, the nurse assisting when needed.)

Allow the solution to run slowly until the required amount has been given.

If the patient's condition becomes worse, a stimulant may be ordered.

NOTE: If an incision is made into the vein (rarely necessary), the instruments and catgut will be required.

Precautions:

Have all articles sterile.

Have solution at correct temperature.

Watch the patient's condition, taking the pulse frequently.

PARACENTESIS

Purpose:

To remove fluid from a cavity or a tumor in conditions where free opening is not desirable. The peritoneal cavity, thoracic cavity, and the pericardium are regions frequently tapped.

Equipment:

Tray with the following:
Bath blanket.
Rubber sheet.
Surgical pad or ether sheet.
Sterile sponges.
Sterile towels.
Rubber tubing.
Iodin.
Alcohol.
Collodion.
Specimen basin.
Large jar.
Hypodermic with 2 per cent. cocain.
Trocar and cannula.

Procedure:

Place the patient in a comfortable position, a blanket around her shoulders, and feet resting upon a stool.

Arrange rubber sheet and cover to protect the clothing.

Cleanse the area where puncture is to be made.

Cocain is sometimes injected in the area.

Drape sterile towels around the area to be operated upon.

Direct the end of the rubber tubing into the jar, which has been placed conveniently near to catch the fluid.

The trocar and cannula are next introduced, and the trocar withdrawn.

When sufficient fluid has escaped, the cannula is withdrawn, and the opening covered with a sterile dressing.

The patient must be kept comfortably warm and her condition watched closely.

Precautions:

Everything must be kept sterile.

The patient's condition watched closely, as the change in pressure from the loss of a large quantity of fluid may disturb the general circulation.

BLOOD-COUNT

Purpose:

To compare the number, comparative percentage, and varieties of blood-corpuscles with that of the normal, thereby aiding in diagnosis.

Equipment:

Small pipet.

Cleaning solution.

Alcohol.

Diluting fluid (depending upon whether a red or a white blood-count is to be made).

Procedure:

A small area of the skin surface (the tip of the finger or lobe of the ear) is cleansed with soap and water, then sponged with alcohol.

(Antiseptics are not used, as they coagulate the albumin in the blood.)

Make a small prick in the skin with a sterile needle, and draw a drop of blood into the pipet.

The drop of blood is next sucked up to a mark on the tube, the point of the tube wiped clean, and a certain quantity of the diluting fluid drawn into the pipet.

The blood and the diluting substance are thoroughly mixed.

A smear is made on a special glass slide, and the blood examined under the microscope.

HYPODERMOCLYSIS

Purpose:

To supply the body with fluid in case of hemorrhage or shock. For stimulation.

Equipment:

Tray with the following articles:

Rubber sheet.

Surgical pad or ether sheet.

Sterile rubber tubing.

Sterile glass connecting tip.

2 needles about 3 inches long.

Sterile gauze sponges.

Sterile towels.

Iodin.

Alcohol.

Flask of sterile solution (120° F.).

Procedure:

Place the patient in a comfortable position, the position depending upon the site to be used for the injection of the fluid.

Cleanse the skin.

Drape area with sterile towels.

Attach the needle to the rubber tubing.

Allow the fluid to run until it is warm and the air all expelled from the tube.

Insert the needle. (This procedure usually carried out by the doctor.)

Allow the solution to run until the desired amount has been given.

Withdraw the needle while some fluid still remains in the flask.

Clamp the tube before the needle is withdrawn to avoid spilling the contents.

Have pledget of sterile cotton ready, and press gently for a moment over the area where needle was withdrawn.

Precautions:

Do not introduce too much solution in one area, as the pressure will cause pain and discomfort.

Allow the solution to flow slowly.

Be very sure that the solution is the correct temperature.

Keep needles, etc., sterile.

Watch the patient's condition carefully.

TRANSFUSION

Purpose:

To supply the body with blood after a hemorrhage, in hemophilia with lessened coagulability of the blood, in serious anemias, malnutrition, in septicemia, and for patients suffering from malignant growths.

Equipment:

Tray with the following:

Large flask containing sodium citrate solution (strength ordered).

Sterile glass rod.

Flask of sterile normal saline solution.

Sterile glass graduate (to measure citrate).

Sterile towels.

Sterile sponges.

Sterile dressing.

Rubber tubing.

Syringe (20 to 30 c.c.).

Rubber pad and cover.

Disinfectant to cleanse skin.

Basin with warm water (to keep citrate warm).

NOTE: Three methods may be used:

1. The "Unger," or direct method.
2. Lindeman method.
3. The citrate method.

The direct method is not used so much as the indirect, except in emergency.

The Lindeman method is accomplished by means of several 20-c.c. syringes, with a special set of cannulas.

The citrate method is used extensively, and results are satisfactory.

Procedure for Citrate Method:

Blood is withdrawn from the donor directly into a flask containing sodium citrate solution. It is then stirred gently with the sterile glass rod to mix with the citrate and avoid clotting of the blood.

The method of injecting the blood into the vein of the recipient is the same as that for a saline infusion.

The amount of blood given is noted and recorded on the chart.

Precautions:

Keep the patient warm, and watch for any adverse symptoms, noticing the color and the pulse.

Preparation of the Donor:

Have donor in comfortable position.

Cleanse the skin, and drape the area with sterile towels.

Two methods are used for withdrawing the blood:

1. With cannula and trocar.

2. Needle, with rubber tubing attached, inserted into the vein.

A tourniquet is applied above the vein, and when the needle has been inserted the tourniquet is loosened.

The amount of blood given is noted, and recorded on the chart.

INTUBATION

Purpose:

To keep the respiratory channel sufficiently open to allow the patient to breathe until the obstruction is removed.

Equipment:

Mouth-gag.
Intubator or introducer.
Extubator or remover.
Set of hard-rubber tubes (different sizes).
Silk thread.
Obturator.
Blankets for draping.

Procedure:

The patient (depending upon size) should be wrapped closely, and confined in a sheet or blanket.

The head held upward and backward, with the chin in a straight line with the trachea.

Adjust the mouth-gag.

The tube is inserted by the physician, and should take not more than two or three seconds, as the breathing is obstructed during this process.

The tube may be left in two to seven days, depending upon the condition.

RESTRAINT OF PATIENTS

Purpose:

To prevent irresponsible patients from doing themselves injury.

Equipment:

Depending upon method of restraint.

Procedure:

1. A board the length of the bed, and about 14 inches high, covered with a sheet and padding, tied to the bed frame, is all that is necessary in most cases to keep the patient in bed (Fig. 55).

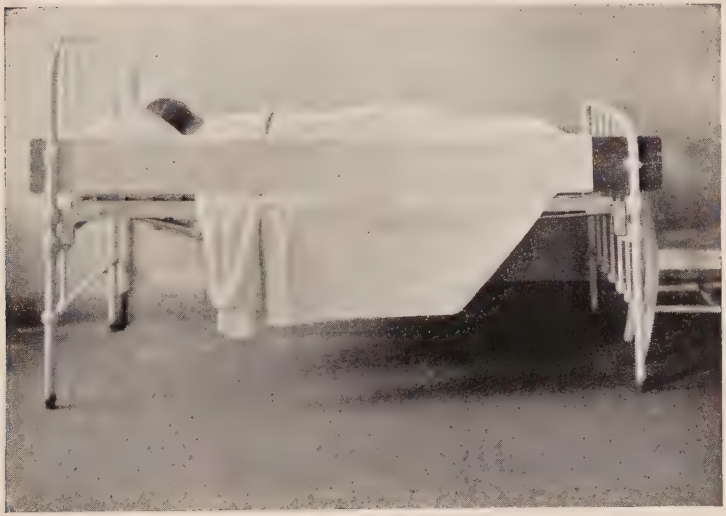

Fig. 55.—Use of a bed-board.

Old people, or those affected by mild delirium, may continually try to get out of bed. A slight barrier is all that is usually necessary.

2. Another method that serves very well for mild cases is a sheet folded lengthwise and placed across the patient, the ends

being tucked in under the mattress. This must not be drawn too tightly over the patient.

3. Fold two sheets diagonally. Place the center of the first folded sheet under the patient's pillow. Bring the ends over his shoulders, under the arms, and tie the ends to the bar at the head of the bed. Place the second folded sheet under the patient's ankles, making a loop around each ankle, and tying the ends together around the bar at the foot of the bed.

Fig. 56.—Restraining sheet.

If the hands must be restrained, fold two draw-sheets diagonally. Loop one sheet around each wrist, and tie to the side of the bed frame, out of reach of the patient's hands. Or, use a strip of strong muslin $1\frac{1}{2}$ yards by 27 inches; fold, and place a pad of cotton in the center between the folds.

4. For violent patients the restraining sheet or jacket may be required (Fig. 56). This is heavy, uncomfortable, and very fatiguing. It should never be used unless absolutely necessary, and never without an order from the doctor in charge of

the case. Help will always be required to put a patient in such a restraint, and also to take him out. Never attempt it alone.

Have the patient well covered with one or two bath blankets before applying the restraint. Place the arms in the sleeves of the sheet. If there is an underpiece, pass this beneath the bed and fasten securely. Fasten all buckles and straps in such a way that the patient cannot get at them. *Avoid* pressure and weight over the chest.

Precautions:

Restraint in any form may be a serious danger to the patient, and should never be used unless ordered. It is seldom necessary if a competent nurse is in charge. If used, be most careful that the restraint does not interfere with the circulation or the respiration, and that it does not hold any part of the body in an uncomfortable position.

CARE OF THE BODY AFTER DEATH

Equipment:

Clean sheet.
Gown.
Stockings.
Cotton waste.
Old linen.
Pins.
Tags.
Comb.
Bandage.
Rubber gloves (for infected cases).
Equipment for a bath.

Procedure:

Never begin the preparation of the body until the doctor has pronounced the patient dead, and notice of this, with exact time, etc., has been sent to the office.

First straighten the body, and place in the dorsal recumbent position, so that it will look as natural as possible (this can be done without waiting for orders).

Remove rubber rings, hot-water bags, back-rests, and extra pillows.

Remove spread and blankets, leaving a sheet over the body.

Care for all valuables, rings, jewelry, money, etc.; make an accurate, detailed list, and take these, with the list, to the office.

If the patient has any false teeth, these should be placed in the mouth at once, as the jaw sets, and it is impossible to do this later.

Leave the head and shoulders on one pillow to prevent congestion of the vessels of the face.

Bathe the body as you would bathe a patient.

If a surgical case, apply clean dressings, using plenty of cotton if there is any drainage (use unsterile dressings).

A diaper of old muslin reinforced with cotton waste or oakum is put on to guard against the escape of feces from the relaxed rectum.

If there should be any difficulty in keeping the eyes closed, a few fibers of cotton may be placed over the cornea.

Put on the gown and stockings, and, if in the hospital, pin a tag, containing the name, date, and ward, securely to the gown.

Wrap the body in a sheet, pin securely, and pin a tag, corresponding to the first one, on the outside of the sheet. (Use sheet and gown reserved for this purpose.)

All clothing should be carefully wrapped, marked with the patient's name, and sent with the body.

Place the body on a stretcher, cover completely, and remove to the morgue.

All work should be done quietly, quickly, and respectfully, keeping the knowledge of or the idea of death from the patients as much as possible.

Precautions:

Consider the wishes and feelings of the patient's family, whether or not they are present, and work accordingly.

Do as little talking as possible, and that only business.

Be most careful of all the patient's belongings; see that none are mislaid or lost.

Undertakers, as a rule, do not like to have bandages used, as they are apt to cause congestion, the marks of which are difficult or impossible to remove.

TABLES OF WEIGHTS AND MEASURES

Apothecaries' System:

Dry Measure		*Liquid Measure*	
20 grains (gr.)	= 1 scruple	60 minims	= 1 fluidram (f℥)
3 scruples	= 1 dram	8 fluidrams	= 1 fluidounce (f℥)
8 drams	= 1 ounce	16 fluidounces	= 1 pint (O)
12 ounces	= 1 pound	2 pints	= 1 quart (qt.)
		4 quarts	= 1 gallon (gal.)

Metric System:

The unit of volume is 1 cubic meter.

1000 cubic decimeters = 1 cu. meter
1000 cubic centimeters = 1 cu. decimeter
1000 cubic millimeters = 1 cu. centimeter

The unit of capacity is the liter, which is equal to the amount of water at 4° C. contained in 1 cubic decimeter. The millimeter (1/1000 liter) is equivalent to the cubic centimeter, and is written 1 c.c., or 1 mil. (the abbreviation of millimeter).

1000 c.c. or 1000 mils. = 1 liter.

The unit of weight is the gram, which is the weight of 1 cubic centimeter of water at 4° C.

1.0 = 1 gram
0.1 = 1 decigram
0.01 = 1 centigram
0.001 = 1 milligram
10.0 gm. = 1 dekagram
100.0 gm. = 1 hectogram
1000.0 gm. = 1 kilogram

Equivalents:

℥j or	4 gm.	= 1 level teaspoonful
℥ij or	8 gm.	= 1 dessertspoonful
℥iv or	16 gm.	= 1 tablespoonful (½ oz.)
℥viij		= 2 tablespoonfuls (1 oz.)
℥vj		= 1 teacupful
℥viij or	256 c.c.	= 1 drinking glassful

In average non-poisonous solutions ℥viij or 1 oz. is usually considered to equal 30 grams (in round numbers). This would give 180 c.c. in 6 oz., and 240 c.c. in 8 oz.

1 milligram = 0.001 gm. = $\frac{1}{64}$ grain (gr.)
1 centigram = 0.01 gm. = $\frac{1}{6}$ gr.
1 decigram = 0.1 gm. = $1\frac{1}{2}$ gr.
1 gram = 1.0 gm. = $15\frac{1}{2}$ gr. (usually taken as 15 gr.)

1 cubic centimeter (1 c.c.) = 15 grains
1 liter, 1000 c.c. = 1 quart (approximately)

1 grain (gr.) = 0.065 gram or 65 milligrams
1 dram (dr.) = 4.0 grams
1 ounce (oz.) = 30.0 grams (approximately)

1 minim = 0.065 c.c.
1 dram = 4.0 c.c.
1 ounce = 30.0 c.c.
1 pint = 500.0 c.c.
1 quart = 1000.0 c.c.

RULES USED IN MAKING SOLUTIONS AND IN GIVING MEDICINES

1. To reduce per cent. to ratio, divide 100 by the per cent.

2. To reduce ratio to per cent., divide 100 by the second term of the ratio.

3. To find the amount of drug in a solution of a known strength when the strength is expressed in per cent.:

The amount of the drug : amount of solution :: per cent. : 100.

4. The above rule is also used to find the per cent. strength of a solution when the amount of drug in the solution is known.

5. To find the amount of drug in a solution of known strength when the strength is expressed in ratio:

The amount of drug : amount of solution : : 1 : second term of ratio.

6. To make a weaker solution from a stronger one when the strength of each solution is expressed in per cent.:

Per cent. strengths are to each other as the amount of the stronger solution needed is to the whole amount to be made.

Example: Make 5 oz. of a 10 per cent. solution from a 25 per cent. solution.

$$10 : 25 :: x : 5 \text{ oz.}$$

$$25x = 50$$

$x = 2$ oz. (amount of stronger solution needed).

7. To make a weaker solution from a stronger when the strength of each solution is expressed in ratio:

Second term of ratio : second term of ratio : : x : the whole amount to be made.

Example: Make 10 oz. of a 1 : 1000 solution from a 1 : 100 solution.

$$100 : 1000 :: x : 10 \text{ oz.}$$

$$1000x = 1000$$

$x = 1$ oz. (amount of stronger solution required).

8. A convenient rule to remember: There are approximately 4.5 grains of drug in 1 oz. of a 1 per cent. solution.

9. Every bichlorid of mercury tablet contains 7.5 grains, and will make 1 pint of a 1 : 1000 solution.

10. To give fractional doses:

Divide the amount ordered by what you have on hand, and give that fraction of the dose on hand. If in tablets, dissolve in amount of water easily divisible by your fraction.

Example: The ordered dose is $\frac{1}{40}$ grain of strychnin. The tablets on hand are grain $\frac{1}{30}$.

$\frac{30}{40}$ — $\frac{3}{4}$ (fraction of tablet on hand required to give dose ordered). Dissolve the tablet in 20 minims of water, and give 15 minims.

11. Computing children's doses:

(1) For a child from one to thirteen years old.

$$\frac{\text{age}}{\text{age} + 12} \times \text{adult dose.}$$

(2) For a child one month to twelve months old.

$$\frac{\text{age in months}}{150} \times \text{adult dose.}$$

TRAY EQUIPMENTS

MOUTH TRAY

Covered cups..... 3
Glass tubes..... 3
Toothpicks.
Tongue depressors.
Applicators.
Lubricant:
  Cold cream.
  Zinc oxid.
  Vaselin.
Mouth-wash cup.
Expectorant basin.
Surgical towels..... 2
Gauze.

EYE TRAY (Fig. 57)

White enamel basin.
Instrument basin, with following:
  Sterile scissors.
  Sterile probe.
  Sterile forceps.
  Sterile hemostat.
Glass jar with sterile dossils.
Candle-holder with candle.
Box of matches.
Adhesive—$\frac{1}{4}$ inch wide.
Tube with safety-pins.
Eye-shields.
Sterile gauze—6 and 9 inch.

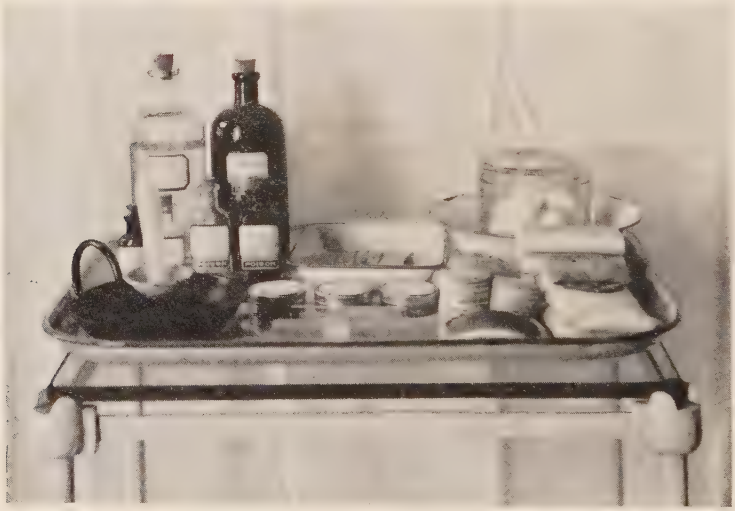

Fig. 57.—Equipment for surgical dressing of the eye.

SOLUTIONS USED FOR MOUTH-WASH

Boric acid.
Seiler's solution.
Dobell's solution.
Glycerin and lemon juice.
Castor oil and lemon juice.

Sterile cotton eye-pads.
Bandages.
Ointments.
Solutions:
  Boric acid—saturated.
  Bichlorid—1 : 10,000.
  Eserin.

Cocain—1 per cent.
Silver nitrate—1 per cent.
Atropin—1 per cent.

TRANSFUSION AND BLOOD-CULTURE TRAY

Tourniquet 1
Hemostat 1
Tr. iodin ..... Bottle
Surgical alcohol ..... Bottle
Collodion ..... Bottle
Surgical towels 1
Small rubber 1
Sterile cotton.
Small basin for waste.
Extra equipment.
Wassermann tubes.
Blood chemistry tube.

EYE-COMPRESS TRAY

Gray basins 2
White enamel cup 1
Glass jar with cover.
Gauze compresses.
Eye pads.
Alcohol lamp 1
Matches ..... Box
Bichlorid of mercury.
Sterile water.

PHYSICAL EXAMINATION TRAY

Gray basin 1
White enamel cup 1
Dossils in cup.
Sterile gloves ..... Pr.
Sterile vaselin.
Bath blankets 2
Surgical towels 2
Extension light 1
Extra equipment.
Speculum.
Tenaculum forceps.
Uterine dressing forceps.

HYPODERMIC TRAY

Alcohol lamp 1
(with spoons)
Hypodermic syringe 1
Needles and wires.
Container for cotton.
Cup for waste.
Surgical alcohol.
Bottle of water.
Matches.
Enamel tray with bottles of drugs used.

DRESSING TRAY

Small instrument tray 1
Probe, forceps, and scissors.
Bandage scissors.
Hemostat.
Gray basin 1
Dressing basins 2
Sterile safety-pins ..... Tube
Iodoform gauze ..... Tube
Sterile goods, including:
Gauze.
Cotton.
Bandages.
Surgical towels 2
Unsterile goods, as pads, etc.
Special equipment as needed.

PREPARATION TRAY

Gray basin 1
White enamel cup 1
Razor 1
Extension light 1
Bath blankets 2
Surgical towels 2
Paper squares.
Extra equipment:
Iodin.
Ether.
Gasoline.
Alcohol.
Sterile towels and binders.

CATHETERIZATION TRAY

Gray basin 1
Kidney basin 1
Catheter basin 1
(For boiling)
Catheter basin 1
(Covered)
Catheters 4
(Glass and rubber)
Bottle of argyrol 1
Sterile vaselin.
Extension light.
Bath blankets 2
Surgical towels 2

EXTRA EQUIPMENT FOR BLADDER IRRIGATION

Sterile funnel 1
Sterile rubber tubing.
Connecting tip.
Pitcher 1
Solutions:
Boric acid.
Sterile water.
Potassium permanganate.
Argyrol (as ordered).

LAVAGE TRAY

Stomach-tube 1
Large jar 1
Pitcher (for solution) 1
Gray basin 2
Vomitus basin 1
Mouth-gag 1
Rubber apron 1
Small rubbers 2
Bath blanket 1
Surgical pad 1
Surgical towel 1

Solutions used:
Sodium bicarbonate.
Tap-water.
Salt solution.

EXTRA EQUIPMENT FOR GAVAGE

Pitcher or enamel cup for solution.
Gray basin containing hot water to keep solution warm.

TRAY FOR TREATMENT OF BURNS

Gray basin 1
White enamel cup 1
Brush basin.
Brushes 2
Spatula 1
Jar of wax 1
Electric dryer 1
Sterile gauze.

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